Gender-based Violence: Strengthening the role and scope of Prehospital Emergency Care by promoting theory, policy and clinical praxis

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DECLARATION

I, Navindhra Naidoo, hereby declare that the work on which this dissertation/thesis is based is my original work (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been, is being, or is to be submitted for another degree in this or any other university.

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For:

Santhoshini Naidoo

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ABSTRACT

Gender-based Violence has a considerable prevalence globally, but it is South Africa that has recorded the highest femicide rate in the world. Prehospital Emergency Care providers appear to be well positioned (as first responders) to respond to abuse early. The aim was to understand and strengthen current/potential practice of domestic violence intervention by prehospital emergency medical systems in the context of global health-sector responses. The paradigm was critical theory and the methodology was exploratory sequential mixed methods. Interviews with managers/policy-makers, focus group discussions of clinician-educators and non-participant observation of simulated practice resulted in hypothesis generation. The quantitative phase involved a survey and cohort study with a screening intervention in a public emergency service.

The qualitative phase found challenges and threats to responses require organisational/ideological change as paradoxical practice exists relative to the domestic violence behavioural pathology. Further, role-definition, identity and violence re-contextualisation is needed amidst ambivalent and contradictory positions. Emergent theoretical propositions include: typologies of victims, perpetrators and stakeholder responses; an eco-systemic relationship of state/societal expectations; and a 'conceptual compass' for preventing systemic research bias. The cohort study found bio-psycho-social responses and prehospital screening for domestic violence effective and that the evaluation of prehospital met/unmet need was prudent. The historical domestic violence detection rate was found to be 5,1/1000. A nine-fold increase in detection following the screening training and implementation translated to 47,9/1000 emergency care patients, with no adverse events. These rates are unprecedented for South African emergency care and support screening-policy implementation. The difference in domestic violence detection, quantifies the extent of the practice gap, with an alarming missed case detection of 42,8 per 1000 patients (females, 14 years plus).

Conceptualisation of the emergency care burden of domestic violence and an awakening to the unacceptability of current practice is warranted. There is a risk of regulatory and organisational 'capture' mediated by masculine hegemony and resuscitation bias. Professionalization should enable a community of practice approach to violence prevention. Recommendations include the national implementation of screening policy; mitigation of regulatory capture risk and professionalising responses through curriculum-reform. The proposed Risk-Need-Responsivity practice-model promotes clinical coherence in

Emergency Care. This elevation of the emergency care discourse is likely to benefit the victim and emergency medicine community. Research is warranted in the evolving epidemiology of domestic violence, the acute/clinical needs of victims/perpetrators and the role of emergency medical systems and surveillance, in promoting health and preventing the associated morbidity/mortality, both as a forensic emergency care burden and as a social determinant of health.

KEY WORDS

Gender-based violence, domestic violence detection, Intimate partner violence, emergency care/medicine, out-of-hospital/prehospital care scope, critical theory, universal and selective screening, forensic emergency medicine, exploratory sequential mixed methods, cohort design

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ABBREVIATIONS

AEA: Ambulance Emergency Assistant, Intermediate Life Support
AFEM: African Federation of Emergency Medicine
AHA: American Heart Association
APA: American Psychological Association
BAA: Basic Ambulance Assistant, Basic Life Support
BPA: Beijing Declaration and Platform for Action
BTech EMC: Bachelor of Technology: Emergency Medical Care
CCA: Critical Care Assistant, Advanced Life Support
CEDAW: The Convention on the Elimination of All Forms of Discrimination against Women
COP: Community of Practice
COEC: College of Emergency Care
CPD: Continuous Professional Development
CSDH: Commission on Social Determinants of Health
CPUT: Cape Peninsula University of Technology
DOH: Department of Health
DV: Domestic Violence
DUT: Durban University of Technology
EBM: Evidence-based Medicine
EC: Emergency Care
ECP: Emergency Care Practitioner
ECT: Emergency Care Technician, Advanced Life Support
ED: Emergency Department
EMC&R: Emergency Medical Care & Rescue
EiDM: Evidence-informed Decision Making
EMS: Emergency Medical Service/System
EMRS: Emergency Medical Rescue Service
FGD: Focus Group Discussion
GBV: Gender-based Violence
HEI: Higher Education Institution
HPCSA: Health Professions Council of South Africa
ICRC: International Committee of the Red Cross
ILCOR: International Liaison Committee on Resuscitation
IOL: Independent on-line

IPV: Intimate partner violence
KZN: KwaZulu Natal
MDB/ M&D: Medical and Dental Board
MRC: Medical Research Council
NAI: Non-accidental Injury
NCert EC: National Certificate Emergency Care, Advanced Life Support
NDip EMC: National Diploma Emergency Medical Care, Advanced Life Support
NFS: Non-fatal strangulation
NGO: Non-governmental Organisation
NICE: National Institute for Health and Care Excellence
N-PO: Non-participant Observation
OECO: Operational Emergency Care Orderly, Intermediate Life Support
PBEC: Professional Board for Emergency Care
PRAISE: The Prevalence of Abuse and Intimate Partner Violence Surgical Evaluation
PRF: Patient Report Form
QD: Qualitative Description/descriptive
RCT: Randomised Controlled Trial
RNR: Risk-Need-Responsivity
RSA: Republic of South Africa
SAPS: South African Police Service
SDH: Social Determinant(s) of Health
UCT: University of Cape Town
UN: United Nations
UNISA: University of South Africa
USA: United States of America
VAC: Violence against Children
VAW: Violence against Women
WC: Western Cape
WCG: Western Cape Government
WHA: World Health Assembly
WHO: World Health Organisation

1 CHAPTER ONE: INTRODUCTION

1.1 Introduction

Gender-based violence (GBV) remains a considerable burden for health and criminal justice institutions worldwide. To date, there have been limited *prehospital* studies in relation to GBV, and in particular, responses to domestic violence (DV) and intimate partner violence (IPV), amongst the South African prehospital emergency care (EC) community, that function in emergency medical services (EMSs). The burden of both met and unmet EMS/EC need with respect to DV in the Republic of South Africa (RSA) is unknown. This study sought to strengthen the role and scope of the EC response to DV by promoting relevant theory, policy and clinical praxis.

In this chapter, definition of key terms precedes the background to and statement of the research problem. The study's purpose and significance set the scene for the primary research questions and hypothesis. The chapter concludes with the design, paradigm, scope, assumptions and limitations.

1.2 Definition of Terms

This section explains the adoption of terms commonly used in the study. These terms are pivotal in the provision of context to the study: emergency care; emergency care provider; GBV; victims and survivors; domestic violence.

1.2.1 Emergency Care (EC)

EC usually refers to paramedical personnel in acute care situations in the prehospital or out-of-hospital milieu. EC is defined as:

> ...the rescue, evaluation, treatment and care of the ill or injured person in an [EC] situation and the continuation of treatment and care during the transportation of such person to or between health establishments. (Health Professions Act 56, 1974)

The focus of this study is the community, prehospital or out-of-hospital dimension (used interchangeably) and follows The *African Federation of Emergency Medicine* (AFEM) perspective of emergency medicine:

> Emergency Medicine is a medical specialty…that is concerned with delivering time-sensitive care to individuals with any type of acute (emergency) illness or injury. Acute care may be defined as the comprehensive, system-based approach to time-

> sensitive disease. It encompasses all health system components and care delivery platforms used to diagnose, manage, and treat injury and illness that may lead to death or disability without timely intervention…It is a subset of acute care concerned with providing effective health action in response to extreme risk under intense time pressure to address emergent health conditions that present sudden or unexpected threats to life or limb. The value added by acute care and integrated acute care systems can be appreciated from the clinical perspective, the patient perspective, and the system level (African Federation for Emergency Medicine, 2016).

Following the prehospital profession nomenclature by the Health Professions Act (Act 56 of 1974), emergency care (EC) will be the term that is therefore used. The professional regulatory authority is the Professional Board for Emergency Care (PBEC) within the Health Professions Council of South Africa (HPCSA). The Health Professions Act (56 of 1974) renders it illegal for any person to practice or train in EC without professional registration with the PBEC. Those registered may also not exceed their scope of practice for which they are qualified and registered. Medical capacity refers to the professional capacity of EC.

1.2.2 Emergency Care Provider (EC provider)

An EC provider, for the purpose of this study, is any health care provider registered with the Professional Board for Emergency Care (PBEC) at the Health Professions Council of South Africa (HPCSA). These are mostly prehospital providers working in Emergency Medical Service (EMS) organisations. EC providers have different categories of professional registration, demarcated by their qualification and level of professional autonomy. The EMS may be publicly or privately operated. Emergency Care Practitioners (ECPs) refer specifically to those EC providers registered as such with a Bachelor's degree and have the highest clinical scope. The commonly used term 'Paramedic' is a protected term (Health Professions Act , Act 56 of 1974) for a particular registration category hence 'EC provider' or 'EMS worker' is encompassing of all registration categories and is used interchangeably.

1.2.3 Violence Against Women (VAW) in a Domestic Context

GBV is any harmful act that is perpetrated against a person's will and that is based on socially ascribed (gender) differences between males and females. Acts of GBV violate a number of universal human rights protected by international instruments and

conventions[1,2,3]. Around the world, GBV has a greater impact on women/girls than on men/boys. It highlights the relationship between the subordinate status of women in society and their increased vulnerability to violence. Men and boys may also be survivors of GBV, especially sexual violence. The nature and extent of specific types of GBV vary across cultures, countries, and regions. Examples of GBV include: sexual violence, including sexual exploitation/abuse and forced prostitution; DV; human trafficking; forced/early marriage; harmful traditional practices such as female genital mutilation, 'honour' killings and widow inheritance (United Nations Inter-agency Standing Committee, 2005).

As the common manifestation of GBV, in the prehospital context, is domestic violence (inclusive of family violence and intimate partner violence [IPV]), the particular focus of this study is *GBV within a domestic relationship context*. IPV refers to 'behaviour by an intimate partner that causes physical, sexual or psychological harm, including acts of physical aggression, sexual coercion, psychological abuse and controlling behaviours' (World Health Organisation, 2013b, p. vii). Other terms used to refer to this include domestic violence, wife or spouse abuse, wife/spouse battering and dating violence.

Due to the pervasive and protracted nature of GBV sequelae, the term 'victim' is mostly used over the term 'survivor'. The civil society movement convention is to use the word 'survivor', as it is empowering and makes reference to the high mortality of GBV. However, in the health care context, survivors may still have acute, latent or chronic health needs (psychological and physical). The 'victim' nomenclature has the propensity to evoke a health care response due to the structural power relations between health-care providers and the patient community in general.

This study has as its central theme, GBV in a domestic context. GBV and DV are used interchangeably with the latter being the contextual manifestation of the former. The author also acknowledges that violence between men contesting issues of masculinity may also, in a broad sense, be a form of GBV. This understanding however is not an international

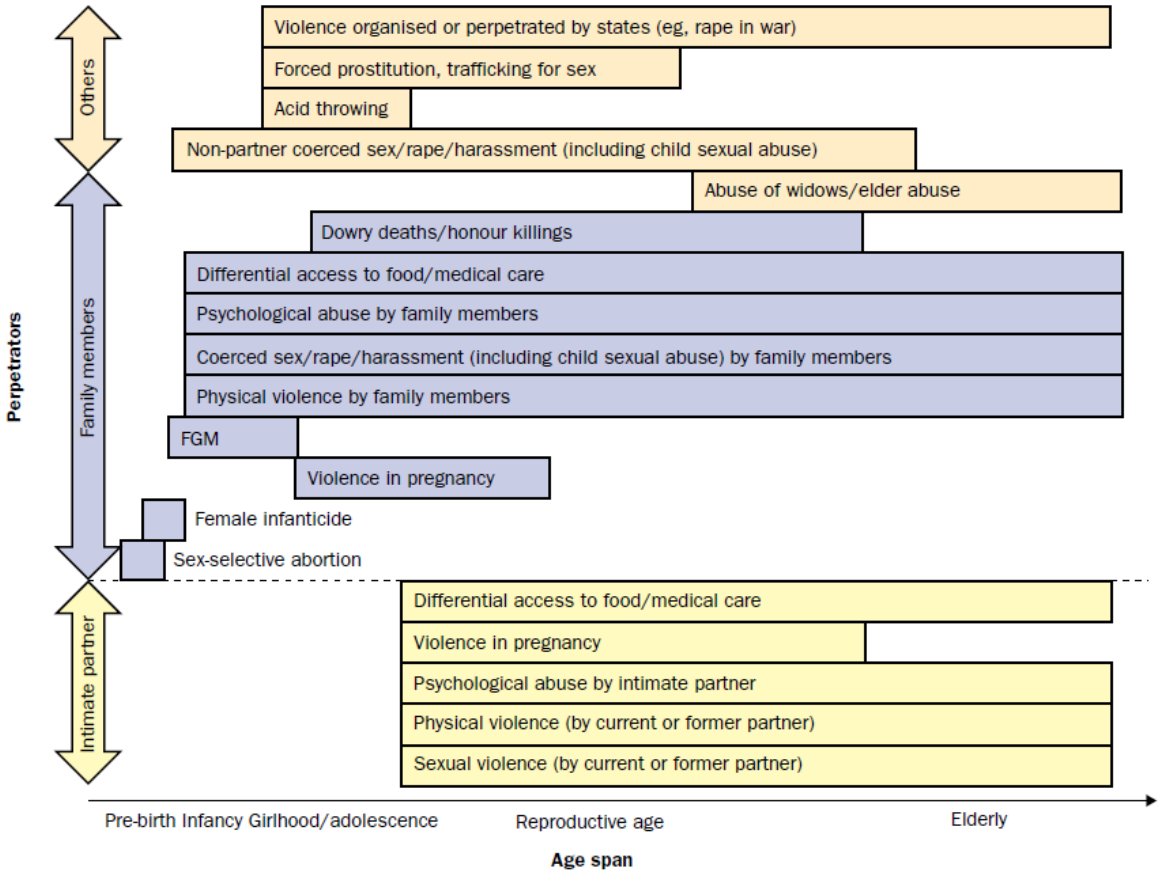
[1] The Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) was adopted by the United Nations (UN) General Assembly in 1979.

[2] The Beijing Declaration and Platform for Action (BPA) defines GBV in line with CEDAW (United Nations, 1995).

[3] The 2030 Agenda for Sustainable Development (United Nations, 2017b) addresses GBV through Sustainable Development Goal 5: "Achieve gender equality and empower all women and girls".

convention and the context for this study is therefore GBV to be meaning violence against *women* (VAW), in a domestic context. IPV has reference to who the perpetrator is and exists within a past or present domestic relationship. A comprehensive breakdown of VAW, over time, is presented below. Here, the prevalence of DV is understood within a life span perspective (Figure 1). Figure 1 provides a summary of the many forms of violence against women over time. Recent additions to abuse typology include economic abuse as a coercive context and intimate partner homicide as a forensic outcome. This typology is of value to EC as EMS organisations respond to emergencies presenting across the life span that may involve engaging with intimate partners, family members and other perpetrators that are responsible for the direct violence or coercive contexts listed in Figure 1.

Figure 1: Violence against women over time (Watts & Zimmerman, 2002, p. 1233)



FGM = female genital mutilation

The Domestic Violence Act in RSA (Act 116 of 1998) defines Domestic Violence as …"Any controlling, abusive, fear inducing act that threatens to harm the health, well-being or safety of a person [gender neutral] in a domestic relationship". The earlier United Nations declaration defines DV as:

> Any act of GBV that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivations of liberty, whether occurring in public or private life (United Nations, 1993).

This violence is contextualised in a domestic context (within a past or present relationship) is generally perpetrated by a male partner, and is experienced by the woman as harmful and destructive to herself, physically, emotionally, socially and psychologically (Family Violence Prevention Fund, 1999). It is perpetuated by a behavioural pathology (Riviello, 2010) of the perpetrator and victim that may include escalating violence, concealment, shame, low self-esteem, risk taking, alcohol and substance abuse in a context of power and control on the basis of gender. DV is a form of GBV and IPV is a form of DV.

1.3 Background to the Problem

GBV has a high prevalence globally (World Health Organisation, 2006a) but it is the RSA that has recorded the highest femicide rate in the world. A retrospective National Study of Female Homicide in RSA (Mathews, et al., 2004) found that 8.8 per 100 000 women 14 years and older were killed by an intimate partner in 1999. This is the highest femicide rate ever reported anywhere. This implies that four women per day is killed by an intimate partner or that one woman is killed every six hours by an intimate partner. Also where the woman is killed by a known perpetrator, it is an intimate partner that is responsible for killing one in every two such women. This statistic has relevance for the prehospital EC profession considering that historically, EC provider training and practice has not had any particular focus on GBV intervention. EC providers are however, well trained in cardio-pulmonary resuscitation and medical rescue (American Heart Association, 2015).

The absence of any clear response protocol to GBV in a Health Professions Council of South Africa (HPCSA) regulated profession, suggests the reliance on practitioner discretion. EC providers appear well positioned (as first responders) to screen for abuse early but there is no evidence of the extent to which this is in fact done, or success or failure in this endeavour (Naidoo, Knight, & Martin, 2013; Naidoo, 2007).

1.3.1 Intersections between GBV, EMS and Forensic Medicine

Amongst the medico-legal issues in RSA, EC is not defined by its forensic processes and forensic outcomes or by its public health role. The Department of Health, in: "The Primary Health Care Package for South Africa: a set of norms and standards" provides useful insight into how national health policy approaches the convergence of violence, EC and forensic medicine. The document set out the norms and standards that are to be made available in the essential package of primary care services. It envisaged service to victims of sexual abuse, DV and gender violence that requires co-operation between the health sector, the police and the Department of Justice. It provides for counselling and referral of victims, (sexually transmitted infection) prophylaxis and HIV testing, emergency contraception, care of injuries, medico-legal advice and documentation of evidence (Department of Health, 2000). These norms and standards do not explicitly include or exclude EMS. However, as primary health care is a model of health care delivery for the country, it is reasonable to assume EMS inclusion.

The co-operation between justice and health (as represented in part by EC workers) is a partial object of this study. Care of injuries has bearing on any forensic investigation, but is a key function of the EMS. This study also seeks to understand whether EC providers have a duty to provide risk assessment and referral of victims. Medico-legal advice and documentation of evidence (McQuoid-Mason, Pillemer, Friedman, & Dada, 2002) is part of the forensic medicine overlap as EC workers have the potential to influence the chain of evidence and the documentation thereof.

The Committee on the Future of EC in the United States Health System (2007, p. 37) documents that: "EMS operates at the intersection of health care, EC and public safety and therefore has overlapping roles and responsibilities". Exploiting every opportunity for intervention by every health sector is likely to render the health system more responsive to the overt and covert needs of African health care users who are subjected to one of the highest rates of interpersonal violence in the world (the extent of which is of concern for societal well-being [Naidoo & Nadvi, 2013]); where homicide rates are almost 3 times the global average (World Health Organisation, 2010). The South African mortality rates from

interpersonal violence in 2000 was "7 times the global rate" (Norman, Matzopoulous, Groenewald, & Bradshaw, 2007, pp. 695-702) and was the second leading cause of healthy years of life lost (Norman, et al., 2010).

There is overwhelming forensic justification for prehospital EC systems in Africa[4], as an organ of health and society, to contribute to the mitigation of and emergency response to DV as a pervasive yet covert form of socially-constructed interpersonal violence. The simple logic being mooted here is that violence – as a social ill with dire health consequences – needs to be *socially deconstructed.*

1.3.2 Conflicting Findings on EMS Resourcefulness and DV Readiness

In "Emergency Medical Service: A Resource for Victims of Domestic Violence" (Mason, Schwarts, Burgess, & Irwin, 2010), the authors concur that DV is a common occurrence and frequently results in injuries requiring emergency medical attention.

> "As first responders at the scene of domestic violence calls where personal injuries have occurred, it is possible for Emergency Medical Services (EMS) to routinely identify report and assist victims of domestic violence. EMS providers are, therefore, uniquely positioned to help abused women by both treating the injuries they may have sustained and providing them with support, resources and information; or when that is not possible, by alerting hospital staff" (Mason, Schwarts, Burgess, & Irwin, 2010, p. 561).

Early identification, comprehensive management, documentation of the abuse and injuries sustained and appropriate referral, may be among the most effective strategies to prevent further injury and stem the medical and psychological consequences of DV (Martin & Jacobs, 2003).

> Appropriate timing of domestic violence intervention is an important issue and emphasis is placed on the need for health care providers not only to screen and refer the patients, but also to assess the patient's safety and risk of homicide (Wadman & Mulleman, 1999, p. 689).

The clinical approach above is consistent with principles of continuity of care, community of practice (COP) and evidence-based practice, yet there appears to be a relatively low (self-

[4] The extent of the African magnitude of the problem, insofar as the rehabilitation of DV offenders is concerned, as a PhD reflection, was published in the feminist peer-reviewed journal: Agenda (Naidoo & Nadvi, 2013)

appraised) detection and referral rate by EC providers in RSA (Naidoo, Knight, & Martin, 2013a) when compared to DV prevalence estimates. If confirmed, it would imply that EMS does not conform to the norms and standards referred to in 1.3.1. A study of the same population found only 10% of EC providers had experience of safety-focused and appropriate gender-sensitive handling of DV victims (Naidoo, Knight, & Martin, 2013b). In 2013, the HPCSA approved DV screening guidelines (Annexure 1) for all EC providers registered with the Professional Board for Emergency Care (PBEC) (Vinassa, 2013). However, this guideline had not been implemented nationally as no EC provider had been trained to do so. It is not reasonable to expect practitioners to implement a clinical guideline for which they have had no training (George, 2014; Dreyfus & Dreyfus, 1996). It is also prudent to acknowledge that 'A comprehensive model for intimate partner violence [IPV] in South African primary care' exists (Joyner & Mash, 2012a), but that this model, based on data from primary health care facilities, was not designed for the unique out-of-hospital challenges of prehospital EC. A review of study findings (between 1980-2011) reporting on temporal (time of day, day of week and seasonal) patterns in ambulance demand, found that "temporal patterns are [indeed] present in ambulance demand and importantly these populations are distinct from those found in hospital datasets suggesting that variation in ambulance demand should not be inferred from hospital data alone" (Cantwell, Paul Dietze, Morgans, & Smith, 2013, p. 883). Therefore, this study of the *prehospital response* to DV cases is of relevance.

1.3.3 Social Concerns

GBV is a medico-legal problem as much as it is a social problem and by virtue of its determinants, prevalence and consequences, it is a legitimate forensic and public health issue. It is reasonable to infer that the prevalence of abuse in RSA is high, and that the mortality associated with it is highest in the world, constituting 1 in 2 female murders (specifically IPV) in 1999 in SA (Mathews, et al., 2004). The mortality study of stratified randomly selected mortuaries repeated ten years later for 2009 homicides found, notwithstanding a reduction in the homicide rate, mortality was still more than double the rate in the United States (2.0/100,000; Logan, Smith, & Stevens, 2011). In keeping with the trend of an overall reduction in homicide, there were fewer intimate femicide in 2009. There were 1024 compared to 1349 in 1999, a reduction of 24.1%. This means that in 2009 one woman was killed by a partner every eight hours in RSA compared to one women killed by

a partner every six hours in 1999 (Abrahams, Mathews, Martin, Lombard, & Jewkes, 2013; Abrahams, Mathews, Jewkes, Martin, & Lombard, 2012).

In fact, violence against women is a pandemic feature of our society. Also, it is mainly men in a domestic relationship that perpetrate this abuse. In the first World Health Organisation (WHO) multi-country study on women's health and DV, 19-55% of the women sampled reported abuse and related medical conditions (World Health Organisation, 2006). In a South African community-based prevalence survey on DV, 34.5% of sampled women in the Eastern Cape, 48% in Mpumalanga and 60% in the Northern Cape, were injured in the year preceding the survey (Jewkes, Penn-Kekana, Levin, Ratsaka, & Schrieber, 2001). Forty-two percent of abused women in a national random sample had approached healthcare workers (Rasool, 2002) adding to the assertion that healthcare workers in general (but not specifically EC workers) have exposure to victims of GBV (Vetten, 2003), with overt and covert presentations, and therefore have a duty to care and be responsive (Tshwaranang Legal Advocacy Centre, 2008). The first EC provider exposure to DV was self-appraised at <30 DV cases detected in a continuous six month period (Naidoo, Knight, & Martin, 2013). Thus, the social concern is that whilst EC workers may attend to fatal and near-fatal cases of DV, their actual DV case detection and response to at-risk women and children, or rapes and femicide is unknown.

The social contract[5] (between the state and its citizens) requires that as much value as possible be derived from state expenditure. The almost one billion rand budget (2016-2017) for the WCG: EMS (Western Cape Provincial Treasury, 2016) cannot be justified for resuscitation only (due to 'low health return on investment'). In the same budget speech, the provincial minster of health, Dr Nomafrench Mbombo, spoke of a disproportionate effort spent on "mopping the floor" as opposed to "closing the [leaking] tap" (2016), a reference to the need for 'upstream' preventative health interventions. In RSA, much of the environmental and social predisposition emanates from social and economic inequity.

[5] Social contract (synonymous with social compact) refers to the legal obligations imposed on the state by the South African Constitution and electoral promises for accountability and redress. Budget speeches in RSA refer to "social compact" in reference to social security.

It is the "voluntary agreement among individuals by which, according to any of various theories, as of Hobbes, Locke, or Rousseau, organized society is brought into being and invested with the right to secure mutual protection and welfare or to regulate the relations among its members…an agreement for mutual benefit between an individual or group and the government or community as a whole" (Accessed from http://www.dictionary.com/browse/social-compact on 03/05/17)

“Reducing health inequities is, for the Commission on Social Determinants of Health (CSDH), an ethical imperative. Social injustice is killing people on a grand scale” (CSDH, 2008).

Violence against women and violence against children are two manifestations of DV that share risk factors, such as gender inequality and discrimination. This is exacerbated by social norms that condone violence and promote inequality. Abuse of partners and children often occur in the same home. As violence is entrenched as normal, it may be inter-generational, where victims grow up to become perpetrators. Adolescence may increase vulnerability to certain abuses. Both have similar physical, sexual and reproductive health consequences which if repeated, may have cumulative effects (Guedes, Bott, & Garcia-Moreno, 2016).

The challenge is that the social worker/population ratio of 1:3187 (Parliamentary Monitoring Group, 2013), and a police/population ratio 1:336 (South African Police Service, 2013) is hardly enough to ensure protection of victims’ rights and accountability of offenders. This may result in a lack of confidence in the state’s ability to promote justice. This risk is elevated when one considers that not all social workers are employed by the Department of Social Development, increasing the ratio in real terms; and that 38% of the population (from a 2013 mid-year estimate of 52.98 million) is legally defined as children (Statistics South Africa, 2013).

The large vulnerable population of women and children, who are subjected to a high prevalence of abuse, and insufficient sentinels and protectors in the form of the police and social work champions, places a necessary obligation on all citizens to promote the protection of women and children. Moreover, to address the harmful repeated exposure to violence that serves to perpetuate itself [violence is a learnt behaviour] (Shefer, 2013). Health workers are uniquely positioned to answer this call, to document evidence, reduce mortality and morbidity and respond in a way that promotes hope and freedom from violence (Aschman, Meer, & Artz, 2012).

1.3.4 Educational Concerns

The Journal of Forensic and Legal Medicine reported that *“*Paramedics are frequently the first point of contact for victims of intimate partner violence [IPV]” (Edlen, Williams, & Williams, 2010, pp. 359-362). The authors state that early identification and intervention is a

crucial aspect in IPV injury prevention, which is where the paramedic has a unique advantage to assist.

> …appropriate training and education will allow paramedics to confidently screen these patients. Early intervention could potentially increase due to prehospital identification and reporting by developing an [IPV] screening tool and implementing it at an organisational level (Edlen, Williams, & Williams, 2010, pp. 359-362).

The South African EC curricula do not particularly focus on GBV (Naidoo, Knight, & Martin, 2013a) as the curriculum is intended to support the clinical scope. The most recent clinical scope document (HPCSA, 2006) does not reflect any protocol relating to GBV, DV, rape or child abuse. The *African Federation on Emergency Medicine* (AFEM) Handbook of Acute and Emergency Care (Wallis & Reynolds, 2013), currently 'the only handbook for EC in sub-Saharan Africa', boasts only one page (of one thousand pages) on 'Domestic and intimate violence victims'. That this is the AFEM Handbook, suggests a forensic deficiency in the emergency medicine agenda of the professional society.

The DV screening Guidelines for EC providers in RSA was approved in 2013 (Vinassa, 2013) but remains to be implemented (Annexure 1). To date, none of the over 50 HPCSA accredited EC training providers have implemented the DV guidelines. Thus the EC professional board, which is the largest in the Council, has no evidence of responsiveness to DV, save for the unimplemented policy. Further to the anomaly is that practitioners who do nothing for DV victims may use the lack of training in defence of non-action. The possible consequence of not following through on policy implementation is the promotion of practitioner impunity for non-action in DV cases.

1.3.5 National and International Legal and Policy Frameworks

Legislation exists to compel health workers to report abuse and this section focuses on mandatory reporting and legislation. Child abuse has a domestic abuse and GBV context (Figure 1) as girls and boys are vulnerable at the hands of abusive caregivers or family members. South African research into rape revealed that in 84% of all sexual crimes committed against children, the perpetrator is known to the child (Seedat, Van Niekerk, Jewkes, Suffla, & Ratele, 2009). With respect to mandatory reporting of child abuse in RSA, the research population may encounter, in their professional work, children who have been abused.

Gihwala, (2016) in a qualitative Master's: Emergency Medicine thesis on missed opportunities in rape responses, documents a lack of standardised practice by EC providers in the Western Cape (WC) Province for rape victims. Having considered the legal obligations to report abuse Hendricks (2014) cites Section 110 of the Children's Act as inserted by the Children's Amendment Act (Act 41 of 2007) that provides details of the right to protection that children are afforded in terms of section 28 of the Constitution (Act 108 of 1996). This section compels certain professional sectors to report any child abuse, neglect or maltreatment that is suspected on reasonable grounds to a designated child protection organisation, the provincial department of social development or a police official. In the Children's Act, the direct professional obligation for EC workers (specifically) to report abuse is conspicuous by its absence.

Whilst the letter of Section 110 (Children's Act, 38 of 2005) does not specifically mandate EC providers to report when they suspect that a child has been abused 'in a manner causing physical injury, sexually abused or deliberately neglected', the spirit of the law does. This spirit, however, may be insufficient to compel the protection of the safety interests of the child. Ordinary citizens are given the discretion to report abuse but are also not compelled to do so in terms of section 110. The Sexual Offences Act (Criminal Law (Sexual Offences and Related Matters) Amendment Act, Act 32 of 2007), however, compels all persons who are aware of the sexual exploitation of children to report the offence to the police. Section 110(1) of the Children's Amendment Act stipulates that suspected child abuse must be reported to child protection organisations, the provincial department of social development or the police. Section 110 of the Children's Act implies that reporting of the suspicion of abuse must be done as soon as the suspicion is formed on reasonable grounds (Children's Act, Act 41 of 2007). The purpose of reporting is ultimately to ensure the safety and protection of the child in question. The reporting of a sexual offence must be done 'immediately' according to section 54(1)(a) of the Sexual Offences Act. An interpretation of 'immediately' could mean upon becoming aware of the sexual abuse or when there is a reasonable suspicion of abuse of a sexual nature (Criminal Law (Sexual Offences and Related Matters) Amendment Act, Act 32 of 2007). Subsequently both awareness and suspicion may be experienced by EC providers yet no standard reporting procedure exists in the EMS operations in RSA (WCG Emergency Medical Services, 2012).

The National Institute for Health and Care Excellence [NICE] (2016) in the UK provides national guidance, advice, quality standards and information services for health, public health and social care. It also contains resources to help maximise use of evidence and guidance for continuity of quality care across the health system such as: people presenting to frontline staff with indicators of possible domestic violence or abuse are asked about their experiences in a private discussion; people experiencing domestic violence and abuse receive a response from level 1 (disclosure) or 2 (how to ask about violence and abuse) trained staff; people experiencing domestic violence or abuse are offered referral to specialist support services and people who disclose that they are perpetrating domestic violence or abuse are offered referral to specialist services (National Institute for Health and Care Excellence (NICE), 2016). Notwithstanding the global best practice above, the RSA Domestic Violence Act (Act 116 of 1998) makes no direct reference to EC personnel (and other healthcare professionals') duty to care in cases of DV. Burnett (2016) suggests that training must be coupled with attitudinal change that supports good surveillance.

> EMS personnel are the only health professionals who enter the environment where victimization occurs and are thus more likely to see evidence of domestic and sexual violence than the emergency department clinicians (Burnett, 2016).

This is particularly so when the chief complaint is indirectly related to abuse. EMS personnel may detect abuse and violence that might otherwise go unreported.

> Victims of domestic violence frequently refuse ambulance transport, thereby avoiding medical care in the [emergency department]. In such situations, EMS personnel are the only health professionals in a position to recognize domestic violence and make suggestions for appropriate intervention (Burnett, 2016).

This legislative lacuna was addressed with the HPCSA approval of a DV screening clinical practice guideline, an output of this study (Professional Board for Emergency Care, 2013). The protocol establishes a practice standard against which practitioners can be held to account as failure to protect the public and provide for patient safety would constitute unprofessional conduct (Health Professions Act , Act 56 of 1974).

1.3.6 The Gap in the Knowledge

EC providers, as first responders in healthcare, are not well prepared to screen for violence (as a prevention modality) although ethically (and in some measure, legislatively) obligated to do so (Naidoo, Knight, & Martin, 2013c). EC providers have a duty to treat and care for *all* patients (HPCSA, 2010; Health Professions Council of South Africa, 2008). This, in the

context of GBV, assumes that practitioners understand the dynamics of such abuse and the needs of abused patients, and that they have the capacity to be responsive. There appears to be insufficient professional influence (historically) over EC providers to treat GBV victims appropriately despite The Bill of Rights (Constitution of the Republic of South Africa, Act 108 of 1996, p. 1247). Section 12 promises “Freedom and security of the person” which includes the right not to be deprived of freedom arbitrarily or without just cause; to be free from all forms of violence from either public or private sources; not to be tortured in any way; and not to be treated or punished in a cruel, inhuman or degrading way. Further, “Everyone has the right to bodily and psychological integrity”, which includes the right to make decisions concerning reproduction and the right to security in and control over their body. Section 27 (Constitution of the Republic of South Africa, Act 108 of 1996, p. 1255) promises the right to “Health care, food, water and social security” to the extent that everyone has the right to have access to health care services, including reproductive health care; sufficient food and water; and social security. The state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of each of these rights. No one may be refused emergency medical treatment.

The knowledge gap is that there is no directly relevant published South African research on prehospital interventions for GBV by EC providers, save for this study’s preliminary work that documents the absence of screening (Naidoo, Knight, & Martin, 2013) and the synthesis of evidence for domestic violence management and prevention in EC (Naidoo, Artz, Martin, & Zalgaonker, 2014). There is no evidence that the ‘comprehensive model for [IPV] in South African primary care’ (Joyner & Mash, 2012a) can suffice as a prehospital model. This three-tier model includes: case finding and clinical care provision by primary care providers; psychological, social and legal assistance by 'IPV champions' (followed by a group empowerment process); and then ongoing community-based support groups.

As the EC practice is highly regulated, an exploration of professional roles and clinical scopes must involve the EC educators and regulators who set the practice standards for EC practitioners to comply with. As EC practitioners do not usually work outside of an EMS system, appraising the EMS system for GBV responsivity is a knowledge gap. This is relevant since despite the national prevalence of DV, the prehospital EMS (nationally or provincially) has no surveillance system for DV or any other form of GBV. So, the true EMS

burden of DV in RSA is not known and hospital data alone cannot be relied on as a proxy indicator.

1.4 Statement of the Problem

DV is prevalent and has health consequences for which victims directly and indirectly seek health care. The gap in knowledge stems from the lack of a prehospital DV surveillance system in RSA designed to measure EC exposure to DV and consequently the extent of met or unmet need regarding DV victims and EC providers. Therefore, the policy landscape, and the empirical and theoretical underpinnings of prehospital EC provider obligations to DV victims in RSA, is the object of this research.

The specific problem to be addressed is the appraisal of the prehospital need for DV interventions by EC providers and the evaluation of the implementation of fundamental prehospital DV interventions by EC providers in an emerging profession.

1.5 Purpose of the Study

The aim of the study is to document, define and strengthen the role and scope of the South African prehospital EC discipline with regard to DV. This was achieved through a mixed methods research design i.e. Sequential Exploratory design with a qualitative approach first (Phase 1) and an equal emphasis between qualitative and later quantitative (Phase 2) components.

The study sought to synthesize and document, through content analysis, the best prehospital EC practice – as an ideal – in response to DV and evaluate the extent of the policy and practice gap in this regard in RSA. This was achieved through an initial systematic synthesis of the literature spanning literature from 1999 to 2011. Broader issues published during the period 2011-2016 (and earlier) was included in the literature review. This information provided a frame of reference with which to approach the ensuing focus group discussions with emergency medical service (EMS) clinicians, educators and researchers and interviews with power-brokers at the professional regulator. Non-participant observation of simulated learning (in EC programmes) sought to explore the existence and extent of pedagogic dogma and curriculum bias that may serve as barriers to overcome in any GBV praxis re-orientation.

Phase 2 of the study sought to answer the operational question: Does development and implementation of a screening tool by EC providers improve the detection rate of victim exposure to DV and improve referral rate of victims (particularly female, 14 years and older)[6] presenting to the public EMS in the City of Cape Town and Cape Winelands? This quantitative aspect of the study was a cohort study design (a quantitative, observational analytical design with a descriptive component explained in greater detail in Chapter 3). The independent variable was domestic violence training and screening implementation. The dependent variables were rates of DV detection and referral. Comparisons were made between the retrospective cohort namely: medical records completed by EC providers from 5 of 14 randomly sampled EMS bases in the City of Cape Town and Cape Winelands municipalities for a 12 week period (July 2015-October 2015) in the preceding year (without the DV training and screening intervention) and the prospective cohort (with the DV training and screening intervention): medical records after screening implementation for the 12 week period (July 2016-October 2016). Secondary outcomes included: identifying associations between practitioner demographic factors, DV case detection and/or referral frequency and patterns; associations between patient demographics; and DV case detection and/or referral patterns.

1.6 Significance of the Study

A report comparing the results of two South African national studies of female homicide performed 10 years apart (Abrahams, Mathews, Martin, Lombard, & Jewkes, 2013) concluded that RSA needs greater efforts nationally to implement evidence-based violence prevention. It is also clear that domestic violence, rape, child abuse and murder resulting from such abuses has national prevalence (South African Police Service, 2013). Although EC, through private and public EMS organisations have a national footprint, their role and scope in DV intervention is not as yet well evidenced. In fact, the DV burden on EC is not documented. This is of relevance as without baseline incidence and prevalence data, an epidemiological, health systems and health economic evaluation is improbable.

[6] The age of 14 is in reference to the HPCSA-approved routine screening policy and reproductive age. This does not preclude younger children from being screened selectively.

Thus, this study has relevance for health systems development and in particular EMS in RSA. GBV has the potential to undermine developmental gains in that it violates constitutionally entrenched gender rights, economic and personal freedom, and the right to health and health care (Constitution of the Republic of South Africa, Act 108 of 1996). Notwithstanding a deliberate focus on prehospital care, there are implications for hospital emergency departments and primary community based facilities as well. EC providers often feel disempowered in relation to GBV (Naidoo, 2007) and by recommending regulatory and practice change to the HPCSA and EMS respectively; forensic-accountability[7] (Waldron, 2014) may be enhanced.

The outputs of this study should provide enabling recommendations for EC providers, as first responders of the health system, and may directly and indirectly assist in mitigating the undermining of developmental gains by GBV. The EC profession is an emerging profession and is in need of evidence-based guidance on issues such as violence prevention, in the interest of professional growth and relevance of EC in the health sector. Hence, the EC profession, as a DV stakeholder may be strengthened. 'Transforming our world: the 2030 Agenda for Sustainable Development' is of significance as GBV intervention by EC providers can contribute to the promotion of gender equality (United Nations, 2017c), reduce child mortality and improve maternal health, all of which are negated by the systematic and pervasive nature of GBV and impaired health system responses.

The EC profession regulates practice through nationally standardised protocols. GBV-related policy too would need to be founded on principles of bio-ethics and judicious evidence. The gaps and linkages between EC practice and DV policy need to be understood. Engagement with the health profession-specific regulatory authority in the country (HPCSA) which regulates most health professions, including emergency medical

[7] Forensic-accountability: "On this conception, "accountability" denotes the liability of a person to have his actions assessed by a tribunal on the basis of some established norm, such liability being predicated on the availability of a process, formal or informal, to assess his actions in that way." The conception is 'forensic' "because of the judicial paradigm that it involves….The tribunal need not be a court in the strict sense [The HPCSA Committee on Preliminary Inquiry fulfils this role]. Forensic-accountability applies to any situation where a person's actions are assessed impartially on the basis of a pre-established standard." (Waldron, 2014, pp. 1-2). The HPCSA enables professional self-regulation in RSA.

care is a critical and strategic approach in closing such gaps and strengthening linkages. New knowledge would include the role and scope of EC providers in GBV intervention, the constructive alignment of the paradigms and methods employed in this discipline, and elevated discourse in the theoretical and empirical underpinnings of DV meaning in an emerging health profession.

1.7 Primary Research Questions

The primary research question was the basis for data collection and arises from the 'Purpose of the Study': What is the role and scope of the South African emergency care discipline with regard to DV, within the context of a national and global health sector response to GBV?

The scope of the study was delineated by the following primary research questions:

a) What is the clinical best practice by EC providers in response to domestic violence in South Africa?
b) Where do EC educators and providers ideologically and clinically locate themselves relative to the health sector response to GBV and the pathology of domestic violence?
c) What reciprocal implications do explanations of GBV (domestic violence in particular); have for EC educational theory and clinical practice?

The following operational objectives/study outcomes emerged in two sequential phases:

i. Critically appraise and synthesize the best clinical practice by EC providers to domestic violence in South Africa through evidence-based approaches.
ii. Evaluate the ideological assumptions/ perspectives of EC providers, educators and the profession-specific regulator with regard to GBV and in particular, domestic violence.
iii. Evaluate the current clinical practice of GBV intervention by EC providers within an emergency medical system.
iv. Improve educational/regulatory policy and clinical practice through the generation and implementation of evidence-informed recommendations on

domestic violence screening and referral by EC providers in the prehospital field. (The only hypothesis related to this appears below.)

v. Develop an original theoretical analysis that explicates what should happen in the EC field as an emergent health profession to effect positive change in its professional response to GBV, and in particular, to domestic violence.

1.8 Hypothesis

Since Phase I was qualitative, it had 'outcomes' but no hypotheses. The Phase II question was:

Does implementation of a screening tool by EC providers improve detection rate of victim exposure to DV and improved referral rate of female victims (14 years and older) presenting to a public emergency medical service in the City of Cape Town and Cape Winelands?

The Phase II hypothesis was: Having made the assumption that the underlying rate of DV in EMS cases is the same before and after implementation of the DV screening policy (Annexure 1), p1 is defined as the proportion of EMS cases for which DV is detected before implementation of the screening policy, and p2 as the proportion of EMS cases for which DV is detected after implementation of the screening tool. The null hypothesis is $p1 \geq p2$ (i.e. the proportion either remains the same or decreases), and our alternative hypothesis is $p1 < p2$ (the proportion increases).

1.9 Research Design

The research paradigm is critical theory. The following are briefly outlined: a) the participants in the qualitative study and subjects of the quantitative study, b) the instrumentation used to collect data, and c) the procedure followed (Note that this is a brief summary and all these elements are reported in detail in Chapter 3). The objectives are achieved by appraising the *status quo*, developing/testing policy and generating a theoretical frame to understand the DV-EC interaction.

The design is sequential with 2 phases. The first phase of the study was a qualitative exploration and description of the EC practice gap as it relates to domestic violence - the central phenomenon. This is performed by a literature review that includes Evidence-informed Decision Making (EiDM): collecting and synthesising secondary evidence (from

online databases and other sources), interviews with policy makers, focus group discussions (FGDs) with educators and non-participant observation (N-PO) of simulated EC practice. These methods serve to provide different types of data that converge on the meaning of DV for EMS (and EC) and serve to develop a hypothesis. The research sites include Higher Education Institutions (HEI) and EMS organisations in Durban and Cape Town, South Africa.

Table 1: Alignment of the aim, questions, objectives/outcomes and methods

Purpose Aim	The aim of the study is to qualitatively and quantitatively document, define and strengthen the role and scope of the South African prehospital EC discipline with regard to DV.		
?	**Sub-questions**	**Outcomes/ Objectives**	**Methods**
What is the role and scope of the South African emergency care discipline with regard to DV, within the context of a national and global health sector response to GBV?	**a) What is the *clinical best practice* by emergency care providers in response to domestic violence in South Africa?**	i. Critically appraise and synthesize the *best clinical practice* by Emergency Care providers to domestic violence in South Africa through a critical review of literature.	**Phase I:** Literature Review, including systematic synthesis of secondary data through *Evidence-informed Decision Making (EiDM)*
	b) Where do emergency care educators and providers *ideologically and clinically* locate themselves relative to the health sector response to gender-based violence and the pathology of domestic violence?	ii. Evaluate the *ideological assumptions/ perspectives* of emergency care providers, educators and the profession-specific regulator with regard to gender-based violence and in particular, domestic violence.	**Phase I:** Interviews, Focus Group Discussions, Non-participant Observation, *Pilot* Survey **Phase II:** Survey
		iii. Evaluate the current *clinical practice* of gender-based violence intervention by emergency care providers within an emergency medical system.	**Phase I:** Interviews, Focus Group Discussions, Non-participant Observation, *Pilot* Survey **Phase II:** Survey, Cohort Study (retrospective)
	c) What *reciprocal implications* do explanations of gender-based violence, and in particular- domestic violence, have for emergency care educational theory and clinical practice?	iv. Improve educational/regulatory *policy and clinical practice* through the generation and implementation of evidence-informed recommendations on domestic violence screening and referral by emergency care providers in the pre-hospital field.	**Phase II:** Survey **Phase II:** Cohort study
		v. Develop an original *theoretical analysis* that will explicate what is happening in the emergency care field as an emergent health profession to effect positive change in its professional response to gender-based violence, and in particular, to domestic violence.	**Mixed Analysis:** Of all qualitative and quantitative methods

Table 1 shows the alignment between the aim, questions, objectives/outcomes and methods and their coherence is explored further in Chapter 3. As the study had many objectives and many methods, the table intends to show how the knowledge sought and the methods employed are related and overlapped. It becomes clear that Phase I methods are limited to outcomes/objectives i-iii and that the qualitative design alone has limitations on clinical praxis pronouncements. The empirical evidence of Phase II, in the form of the survey and cohort study, was more valid in the policy and practice-related pursuit of objective iii and iv. The theoretical analysis (v) emerged from the mixed analysis of qualitative and quantitative findings. The scope of each method is discussed further in 1.11 and in Chapter 3.

The second (quantitative) phase tested for changes in the detection and referral rate of DV cases by EC providers after implementation of a DV screening protocol, as well as to identify demographic predictors of DV detection and referral rate. Retrospective data on DV detection and referral rate was collected from archived paper-based patient report forms (PRFs), as instrument data where participants were not exposed to the intervention, at the Western Cape Government (WCG): EMS (research site) and was compared with medical records from a prospective cohort of EC providers trained in DV screening. This recording instrument was designed by the researcher in accordance with the approved DV Screening Protocol and the retrospective PRFs. Operational EC providers from 5 (of 14) randomly selected EMS bases, in the City of Cape Town and the Cape Winelands District Municipality were invited to voluntarily participate in a 1-day training workshop and 12-week screening implementation programme that served as the study intervention. A questionnaire on EMS workers' current and past knowledge, belief and practice was also self-administered amongst these participants.

1.10 Research Paradigm and the Determination of 'posture'

Critical theory provides the philosophical underpinning of this study with paradigmatic or theoretical posture determining and enabling the use of appropriate methods of data collection and data analysis (Bergman, et al., 2016). It is embedded in every aspect of the research process and is the single most profound influence to ensure coherence (with study design), logic and explanatory power (Naidoo, 2011).

In seeking an epistemological position (how we come to know), the most befitting ontological lens (world view) and methodological paradigm is required in order to address the aims and objectives of the study. In order to determine the appropriate 'posture' (Guba & Lincoln, 1994), and summarise the basic beliefs that define a particular research paradigm, the responses to three fundamental questions are needed. This forms the structural basis for critiquing research paradigms:

(a) The ontological question (i.e. What is the form and nature of reality?).
(b) The epistemological question (i.e. What is the basic belief about knowledge? What can be known?).
(c) The methodological question (i.e. How can the researcher go about finding out whatever s/he believes can be known?).

Having considered the emergency medical practice ideal in responding to a GBV case, and the current EMS design and function, this study sought to understand their current and future impact on each other. To answer the research question: *''what are the reciprocal meanings for inter-personal violence and emergency medicine?''*, the further question is: *''what is the paradigm that will best inform the researcher's posture toward this question?''*

The critical theory paradigm is distinguished by its critique of the status quo and an emancipatory need for change. It is the foundational theory used to provide a perspective upon which the study is based. As a paradigm, critical theory allows both qualitative and quantitative research where 'historical realist' ontology is used. Historical realism holds that reality is shaped by structures of social, political, cultural, economic, ethnic and gender factors (Bergman, et al., 2012) and reified[8] as natural. The epistemology of critical theory is 'relativist': that knowledge is value-dependent, is influenced by power relations, and is the result of interaction between researcher and participants (Bergman, et al., 2012). In this study, different viewpoints or explanations of the same thing from different vantage points can all have value when they contradict or support each other. The particular gender, race and class dimensions of historical realism enabled an understanding of the complexity of GBV and thus the complexity of multiple interpretations (or realities). This link enhances content validity.

[8] To make something that is abstract more concrete.

> Whereas interpretivists construct our world by means of multiple perspectives, critical theory questions the political nature of that very process, maintaining that some relationships in the world are more powerful than others… (Henning, van Rensburg, & Smit, 2010, p. 23)

"Critical theory and pragmatism are…united in a particular democratic conception of practical social science…" (Pensky, 2005, p. 49). Multiple paradigms (in the mixed methods context) provide a dialectic perspective (Greene, 2007). Paradigms may even be linked to design features (Cresswell & Plano Clark, 2007). The critically minded researcher's brief is to foreground the power of discourses (written or spoken) to shape people's lives, and not to limit the research to predicting or understanding of the researched (Henning, van Rensburg, & Smit, 2010). Such power relations are unpacked in the findings and interpretation. The epistemology is therefore 'relative subjectivism' implying that the research design and strategic approach to answer the research question is ultimately intended to be transformative.

It was Lincoln and Guba (1994) that purported that "naturalistic inquiry is defined not at the level of the methodology but at the level of paradigm" (Anfara Jr & Mertz, 2006, p. 20). The study approach was an inductive/deductive and comparative approach to emergent inquiry that, through several strategies, could explain the role and scope of the South African EC discipline in response to GBV. Therefore, multiple qualitative *and* quantitative methods were employed, since complex questions can require the benefits of both.

Symbolic interactionism holds that human beings are actors rather than just mere responders and that human action is both purposeful and has meanings that the individual allocates for them (Nusbaum & Chenitz, 1990; Priest, Roberts, & Woods, 2002). This is of value in the EC context, where the methods used in this study must elicit what shapes the EC providers into DV 'actors'. Who is the architect of the script and stage, and what is the purpose, action and meaning thereof? Thus, as part of this study an original theoretical analysis is developed that explicates what is happening in the EC field to effect positive change in its professional response to GBV.

The 'causal efficacy' of absences was also considered. For instance, the absence of curriculum embedded training on DV intervention could signal deficient forensic/EC practice. Improving the EC providers understanding of phenomena such as GBV

intervention through absences may signal opportunities for positive change. Reflexivity [the researcher's engagement and explanations in influencing the study (Given, 2008)] and judgmental rationality (value-laden logic) is acceptable when rational choices between better and worse are made. In this way, a mediated position is reached, which need not be an absolute choice. The responsibility that accompanies this freedom is to constantly strive for self-awareness and appraise motives through critical self-reflection.

In critical theory approaches, explanatory critique presupposes an emancipatory motivation (Guba & Lincoln, 1994). For example, the objectives of this study require a move from understanding or seeing the problem of GBV to determining *how what is seen* can be changed and therefore 'emancipate' the relevant 'actors' (such as EC students, practitioners, educators, researchers and policy-makers). Explanations for GBV must consider what has happened, what is happening and what will likely happen.

Should the above-mentioned values give rise to preconceived ideas, they are likely to be based on societal assumptions that may have a gender, race and economic class dimension. Van den Berg (2010), in *''Critical Reasoning and the Art of Argumentation''*, argues that preconceived ideas pose obstacles to clear thinking when they have not been subjected to critical reflection and have a decisive influence on one's thinking. It is not the presence of preconceived ideas that is the problem, as it may be difficult to avoid these, but it is the absence of critical reflection that poses the challenge. Flinders and Mills (1993, p. xi) cogently articulate that: ''Few of us now claim that we enter the field *tabula rasa*, unencumbered by notions of the phenomena we seek to understand.'' Even 'neophyte researchers' (Anfara Jr & Mertz, 2006) can appreciate that a deciding descriptor of research is less about finding the truth and more about accountability for its processes. EC practitioners and researchers of inter-personal violence, are not 'unencumbered' by previous experiences of EC or the impact of such violence as these are social/health-related phenomena. Quantitative research into the EC response to victims of GBV in the Western Cape (Naidoo, Knight, & Martin, 2013b) provided only 'thin', but hitherto unknown, findings about the phenomena and population in question. In contrast, this research focuses on EC regulators, educators and practitioners and gathered DV-related quantitative data in order to enable efficient comparison and to determine correlations that served as points of entry for deeper qualitative inquiry.

The biomedical model, that has largely influenced EC and forensic practice, appears steeped in positivist ideology. Positivism is about finding truth and proving it through empirical means with the goal of knowledge to describe, explain, and in some designs to predict the phenomena that we experience. The core of the scientific endeavour is observation and measurement (Henning, van Rensburg, & Smit, 2010). The health response to violence cannot continue to be a narrow biomedical response (Vetten, 2003), focused on interventions such as haemorrhage control, for example. A bio-psycho-social model of care provides holistic care. While it is mostly men in a society who perpetrate violence (Mathews, et al., 2004; Vetten, 2003; World Health Organisation, 2006a), violence prevention is about the realization of fundamental human rights as much as it is about gender emancipation, emasculation and redress (haemorrhage control too). In the context of a post-apartheid South Africa and a historically complicit health system (Baldwin-Ragaven, deGruchy, & London, 1999), violence prevention is also about gender, race and economic equity and social justice (Guba & Lincoln, 1994) and therefore peace, not as political rhetoric, but as tangible prerequisites for physical health and mental wellbeing (Meyer, Moore, & Viljoen, 2008).

The EC provider, like any health care provider, has the potential to be a proponent of change, and the power to uphold or violate human rights in respect of violence and the health response. Critical theory thus provides an ideological perspective (with explanatory power) that may facilitate the understanding of such concepts and their potential to promote a cadre of emergency health workers that are forensically accountable, clinically sound and responsive to public health and forensic needs through the building of EC provider agency. Agency in this context means the autonomy and sense of self (independence) to make decisions and act on them (George, 2014). Professional autonomy (conferred by the professional regulator) on its own, does not nurture agency or self-efficacy (Goicolea, Vives-Cases, Hurtig, & Marchal, 2015). The Spanish evaluation of health care responses to IPV found that a combination of each team's self-efficacy, perceived preparation and women-centeredness was needed to generate a good response (Goicolea, Vives-Cases, Hurtig, & Marchal, 2015).

Structural and historical insights constitute the critical theory nature of knowledge which may be generalized by similarity. The quality criteria include historical situatedness and an erosion of ignorance and misapprehension as well as stimulus to action/change (Guba & Lincoln, 1994). The researcher's voice is that of a ''transformative intellectual'' as advocate and activist (Guba & Lincoln, 1994) which is a comfortable identity exemplifying the researcher's interest in not just solving a problem technically nor tentatively, but contributing to a sustainable and strategic change in EC (and violence prevention) as insider, participant and relative outsider. By both design and default, critical theory provides the ontological lens and epistemological ''posture'' necessary to frame this study on violence prevention by the emergency medicine discipline, as well as to provide external coherence.

In comparison, the positivist quality bench-mark is rigor through validity, reliability and objectivity (Brink, 2006). Emergency medicine, as a discipline, has implications for forensic medicine. Observation and measurement have been the focus of positivists who, in EC, go (clinically and through research) in search of cause and effect relationships (Joubert, Ehrlich, Katzenellenbogen, & Abdool Karim, 2010). 'What interventions by health care workers are needed and possible in cases of injury through violence and what is likely to work?' These types of questions seek to explore the relationship between the practitioners' understandings of roles and practitioners' subjective experiences of inter-personal violence. Emergency medicine educational theory and clinical practice must be influenced by the epidemiological explanations of violence and vice versa as it does not exist independent of the health context. For the positivist, observations through the senses must also be verified through the senses, in the interest of objectivity. Their theory of knowledge deliberately excludes evidence such as personal insight, opinion and emotion (Henning, van Rensburg, & Smit, 2010) due to their subjective nature. However, insight, opinion and emotion may be central to making meaning of research in EC, particularly if DV is socially constructed and enabled by the behavioural pathology of both perpetrator and victim. Positivist approaches would exclude consideration of how health care users (in the context of interpersonal violence) make meaning of their patient interactions or how organisational or group culture influences health seeking behaviour, medical research, clinical practice, health policy and legislative interpretation (Henning, van

Rensburg, & Smit, 2010; Polit & Hungler, 1999). Thus critical data relative to the context and individual may be overlooked.

Cause and effect interdependency may hold true for some EC epidemiology (Joubert, Ehrlich, Katzenellenbogen, & Abdool Karim, 2010), such as mechanism of injury, but may conflict with theoretical explanations for inter-personal violence, where victims and perpetrators of violence may be blamed entirely or partially for complicity in their own experience or perpetration of violence. Objectivity, in the context of a study, is relative to: its objectives, the insider/outsider/participant perspective of the researcher, the clinical rigor of the health care provider, and the lived everyday experience of "coercive context(s)" (Given, 2008, p. 15) of the IPV victim, perpetrator and health care provider in an EC context. Therefore, inquiry into violence prevention, such as the kind in this study, may be better served by predictive generalisations through a critical theory paradigm that may encourage systemic changes to the EC response to DV.

1.11 Scope, Assumptions and Limitations

1.11.1 Scope

The extent of the study (scope) is tabulated in Table 2. The data collection methods are presented in the order of implementation and completion. The scope is specific to each method but converges when theoretical propositions emerge.

Phase 2, an observational analytical study (with a descriptive component), is a cohort study of DV screening implementation. When considering the possibility of a causal relationship between routine screening and DV case detection, knowing with certainty that the training and routine screening preceded the DV case detection is important (Joubert, Ehrlich, Katzenellenbogen, & Abdool Karim, 2010).

The cohort design, in Phase II (Figure 2) begins with measuring DV case detection among EC patients whose caregivers are free of DV training and routine screening and then ascertains the occurrence of DV case detection by EC providers in the presence of DV training and routine screening. The researcher can be confident therefore, that the exposure to DV pathology training and screening methodology has preceded the DV

detection. The particular research question answered by the cohort design is: *Does implementation of a screening tool by EC providers improve detection rate of victim exposure to DV and improved referral rate of female victims (14 years and older) presenting to a public emergency medical service (EMS) in the City of Cape Town and Cape Winelands?* The retrospective cohort involved archived EMS patient report forms [PRFs] where female patient records are examined for DV notation during July-October 2015. PRFs are standardised templates for all emergency calls, the completion of which is practitioner-dependent given their wide discretion in form completion.

Table 2: Data Collection Method & Scope

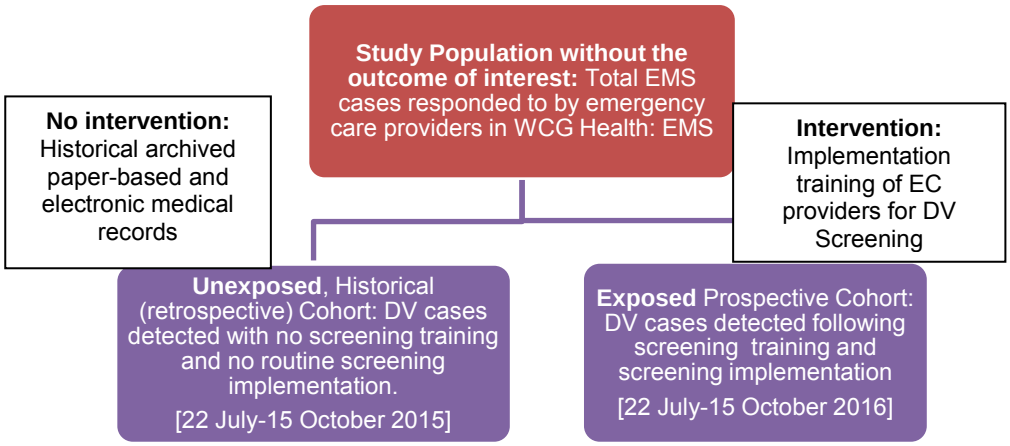
Data Collection Method		Scope
PHASE I	EiDM *Critical Synthesis of Literature*[9]	Define questions and constructs through theoretical, empirical or contextual evidence. Suggest best evidenced practice by EC providers.
	Interviews *EMS Management* *HPCSA Regulator*	Provide role definition insights and challenges in curriculum and regulation and DV policy development opportunities by power/knowledge-brokers.
	Focus Group Discussions • *EMS Educators*	Provide the opportunity for intersections between EC education, practice and regulation to emerge.
	Non-participant Observation (N-PO) • *Simulated Practice*	Observe simulated EC practice for DV and non-DV related cases to assess how DV presence or absence might alter/affect practice.
PHASE II	Survey • *Operational EC Providers*	Validate new/existing constructs and indicate observable relationships between demographic factors, DV beliefs and clinical practices of a cross-section of EC providers. *(A Pilot Survey of EMS Educators and Senior EC Clinicians was conducted in Phase I)*
	Cohort Study • *Retrospective Cohort vs. Prospective Cohort*	Infer probabilistic causality between DV Routine Screening training and DV detection and referral rates.

Operational bases in the WCG: Health, EMS in the City of Cape Town and in the Cape Winelands was sampled using one-stage cluster random sampling (Maree & Pietersen, 2014). All participants recruited after an information session at their place of work before

[9] This focused synthesis preceded the traditional narrative analysis-styled literature review.

one of twelve training interventions, underwent a 1-day training workshop on DV pathology and medico-legal implications, DV screening and referral and reporting guidelines. Training outcomes are constructively aligned to the approved screening tool. The workshop curriculum included: key concepts, guiding principles, screening guidelines, collection of forensic evidence and key concepts in clinical management. For 12 weeks following the training (22 July-14 October 2016) participants routinely and selectively screened for DV and documented findings in a reporting form complementary to the PRF. Generalisability is considered in Chapter 3.

Figure 2: Cohort design showing retrospective and prospective cohorts



Operational bases in the WCG: Health, EMS in the City of Cape Town and in the Cape Winelands was sampled using one-stage cluster random sampling (Maree & Pietersen, 2014). All participants recruited after an information session at their place of work before one of twelve training interventions, underwent a 1-day training workshop on DV pathology and medico-legal implications, DV screening and referral and reporting guidelines. Training outcomes are constructively aligned[10] to the approved screening tool. The workshop curriculum included: key concepts, guiding principles, screening guidelines, collection of forensic evidence and key concepts in clinical management. For 12 weeks following the training (22 July-14 October 2016) participants routinely and selectively screened for DV

[10] Constructive alignment refers to the coherence between assessment, teaching strategies and intended learning outcomes in an educational programme

and documented findings in a reporting form complementary to the PRF. Generalisability is considered in Chapter 3.

1.11.2 Assumptions

It is assumed that participants will have answered truthfully and accurately to the interview questions based on their personal experience, and those participants in the focus group discussions will have responded honestly and to the best of their individual abilities. Limitations represent potential weaknesses of a study. Researcher biases and perceptual misrepresentations are potential limitations in the qualitative aspect of the study, particularly, whereas in the quantitative component, a limitation was the capability of an instrument to accurately record data as well as potential for human error in data capturing.

1.11.3 Limitations

A potential limitation was that the author of the study has had personal exposure to GBV sequelae through the femicide of a sibling and professional experience that includes extreme prehospital cases of battering, rape, child abuse and victim/perpetrator suicide. Having 23 years collective experience in EMS operations and education, the emerging nature of prehospital EC is well understood. His Masters in Public Health dissertation quantitatively highlighted the lack of responsiveness by the EMS to victims of GBV. The above experience may introduce bias that relate to the exposure of patients to treatments in the population, factors that influence inclusion of patients or practitioners in the study, and factors related to assessment and measurement. To manage risk of systematic error, the qualitative discourse was initially pursued in seeking intersections between EC and forensic medicine. This is central to professional development of EC responses to DV cases. Having served two terms as a member of the HPCSA, PBEC and a volunteer of the Advice Desk for the Abused, a non-governmental organisation (NGO), the topic choice is informed from the perspectives of academia, the professional regulator and civil society. To manage time and cost limitations data collection in the retrospective and prospective cohorts were limited to a continuous 12-week period. This is due to the time cost[11] of screening historical data

[11] The cohort study was conceptualised during the revision of the thesis, in response to examiner critique. UCT Ethics approval for the protocol amendment was attained in June 2016. The UCT

and to reduce the effect of participant attrition. The retrospective cohort is for the same period in the previous year as the prospective cohort to address the effect of seasonality. The primary outcomes of interest were a change in the DV case detection rate and DV case referral rate after the implementation of routine screening (for female patients 14 years and older) as compared to a historical base rate. Two provinces (KZN and WC) are included in Phase I of the study but the cohort study was only implemented in the WC due to constraints of time, resources and concern for heterogeneity between EMSs of different provincial governments.

1.12 Summary

Chapter 1 presented the statement and background of the problem as located in the health sector response to GBV. The definition of terms serves to contextualise the study in the prehospital emergency care environment. To operationalise this, DV responses by prehospital EC providers are enquired into. The purpose of the study is to enhance the value proposition that EC has for DV response and redress. The primary research question relates to the role and scope of the South African EC discipline with regard to DV, within the context of a national and global health sector response to GBV. Significance of the study is derived from documenting and mitigating an unmet health need (DV) through early detection and referral and documentation by EC providers. The hypothesis relates to the quantitative aspect (Phase 2) of the study and was predicated on assertions of an unmet need from Phase 1. The mixed method, exploratory sequential design of Phase II was tentative pending the results of Phase I and allows for the mixing of data in the interpretation (Ivankova, Creswell, & Plano Clark, 2014). This is enabled by the theoretical frame of critical theory and a pragmatic approach to methodology; a choice argued for here. The chapter ends with assumptions, limitations and scope that locate the study in the prehospital milieu.

Doctoral Degrees Board allowed only one year for revisions after which time the final submission is due (February 2017). Given the narrow revision time frame, the 12 week data collection period, in 2015 and in 2016 as well as one month (July 2016) for training of participants was the longest period of data collection possible.

The following literature review, Chapter Two, will appraise the knowledge claims about what is known, not known and what value proposition this thesis holds for understanding DV through an EC lens and *vice versa*. Domestic violence (DV) constitutes an undefined EC burden in RSA. The role and scope of the EC discipline, as an emerging health care profession responding to GBV cases, deserves critical analysis and clinical enhancement. To this end, the literature review documents the summary of an Evidence-informed Decision Making process and a traditional narrative analysis.

Chapter Three provides the methodology in 2 phases and related ethical considerations. Phase I uses qualitative description with multiple methods while Phase II uses a quantitative survey and a cohort study (with a descriptive component). The sampling and limitations are discussed.

In Chapter Four, results and qualitative descriptive analysis from the different data collection techniques of Phase I is presented. The convergent validity of Phase I methods and the six emergent themes are presented.

Chapter Five (Phase II results) provides the quantitative results of the survey (including the pilot), retrospective and prospective cohorts. The hypothesis and question emanated from Phase I results. The cohort study has descriptive and analytical findings.

Chapter Six presents the analysis and discussion of the overarching qualitative description, empirical and theoretical propositions of Phase I and II in the form of three emergent categories. An EC practice model for an approach to DV is presented. The chapter concludes with an evaluation of qualitative methods.

Finally, the conclusions and recommendations are communicated in Chapter Seven in relation to the aim and questions that are posed in Chapter 1. Recommendations for future research conclude this chapter.

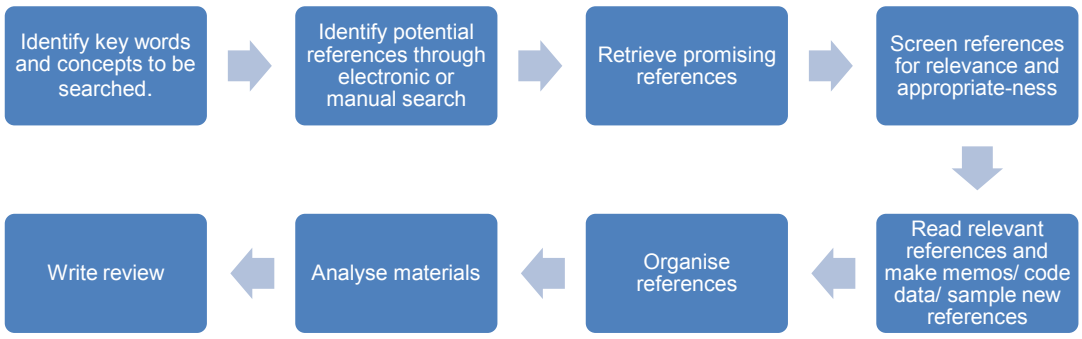
The bibliography and relevant appendices complete the thesis. The referencing style follows the American Psychological Association (APA, author/year) convention as enabled by Microsoft Word®. Page numbers of cited material only appears where direct quotations/paraphrasing appear (in-text or by single indentation). In exercising reflexivity and in accordance with mixed methods convention, the author may use the first person singular pronoun “I”, interchangeably with the third person reference “the researcher”.

2 CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The literature review will focus on the topics by key authors in the field in order to lay the foundations for methods, analytical framework and discussion. The traditional literature review process involves the steps laid out in Figure 3. The literature review aims to summarise, critically analyse, compare, and synthesize prior research in the relevant study areas to form a foundation for this study. The process flow (Figure 3) included identifying key search words from the Chapter 1 background. Potential references were identified and retrieved through electronic databases and manual searches. In relation to the hierarchy of evidence, systematic reviews were preferred. Contextual evidence on the prehospital response to DV and intersections between GBV, Emergency Medical Systems (EMS) and Forensic Medicine was considered through a critical theory 'lens' (discussed in 1.10).

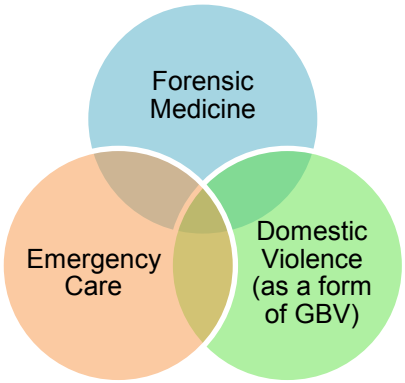
Figure 3: The traditional literature review process (Polit & Hungler, 1999, p. 97)



IPV, as reported in many studies, is discussed in the context of pregnancy, HIV, psychiatric conditions, trauma and complex emergencies. Forensic medicine considerations and implications are then put forward and are framed by IPV-related homicide and screening/clinical case finding discourse. The legislative and policy mandate for EC responses covers both the international and South African contexts and the EC practice gap and DV prevention opportunities are addressed. Specific perspectives on forensic medicine, EC/emergency medicine and DV (as a pervasive form of GBV) and their

intersections (Figure 4) were deemed relevant to this study. This chapter reviews published research on these areas and suggest topics related to the gap in the knowledge.

Figure 4: Interconnected relationship of study areas



An early endeavour at synthesising secondary evidence took the form of Evidence-informed Decision Making (EiDM)[12]. This deviation from the traditional review is explained next. Whilst EiDM (2.2) follows a content analysis approach for a specific question, the ensuing traditional review follows a more general narrative analysis (from 2.3). Both generate themes that inform what is known/not known and what is poorly documented.

2.2 The Role and Scope of EC in DV

The aim of this secondary data[13] synthesis was to provide an evidence-informed answer to the question: *What is the role and scope of prehospital EC providers to DV intervention as a form of GBV prevention?*[14] The answer was intended to determine the theoretical and

[12] The EiDM process provides for content analysis through the '*systematic' synthesis* of secondary evidence. It is not claimed to be and should not be confused with the traditional Cochrane or other 'systematic review' of literature.

[13] Secondary evidence refers to 'data' that was collected by someone other than researcher of this study.

[14] This section on role and scope determination was published in a peer-reviewed journal of the Medical Research Council (MRC)/University of South Africa (UNISA), as a PhD study output

clinical best practice to inform the EC community and policy development by critically appraising the evidence that considers the responsiveness of EMS to the health needs of DV victims.

Evidence-informed Decision Making (EiDM) was employed, in the absence of definitive evidence [15]. This method, coherent with critical theory, involves integrating the best available research evidence into the decision making process in health practice and policy development. It resonates with the study purpose as it enables the most effective and cost-efficient interventions, considers the use of scarce resources, and takes into account customer satisfaction and improved health outcomes for individuals and communities (National Collaborating Centre for Methods and Tools, 2011). These are not necessary considerations for the traditional narrative analysis.

The synthesis underscores theoretical and clinical best practice(s) to inform the EC community and promote the development of appropriate policy. The rationale for policy development is to contribute to the improved response by the health sector. The health-promotion potential and enhancement of EC utility that the EC profession, mostly men of 71,754 practitioners in RSA (HPCSA, 2016) has in GBV intervention is recognised. However, as one of the largest professional boards at the HPCSA, the PBEC and EMS organisations with 18,401 of these providers (end 2014) located in the public and private EMS (National Department of Health, 2016, p. 14) have been complicit (Naidoo, Knight, & Martin, 2013b) in contributing to the widely criticised poor social and state responses to DV (Gevers, Jama-Shai, & Sikweyiya, 2013; Shefer, 2013).

The research to policy gap can have critical implications in patient response and treatment. EiDM, as a *bona fide* but nuanced Evidence-based Medicine (EBM) strategy, seeks to bridge the gap between research and practice as well as between research and policy. It departs from traditional EBM approaches in that it values theoretical, experiential, empirical and contextual research *and* non–research evidence to answer a broader range of questions for which there is no definitive evidence (National Collaborating Centre for

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(Naidoo, Artz, Martin, & Zalgaonker. 2014. "A stich in time...may save nine." A systematic synthesis of the evidence for domestic violence management and prevention in Emergency Care. African Safety Promotion Journal)

[15] Definitive evidence refers to a widely accepted, comprehensive, high quality/level of evidence.

Methods and Tools, 2011). It is also reproducible, transparent and efficient with high quality outputs to guide practice and policy on an inclusive rather than exclusive evidentiary basis.

The use of EiDM as a pedagogic tool in EC education provides some contextual validation for its use in this study. The Hierarchy of Evidence 'instrument' (Table 3) pre-empted the order of relevance of evidence sampled in relation to the EiDM question. It transparently prioritised secondary research over primary research and non-research evidence. The Critical Appraisal instrument (Annexure 2) considered criteria for relevance, robustness and bias and ranked evidence accordingly. The Article Description Table (Annexure 3) was developed to summarise direct and indirect findings of each evidence source appraised. Following the findings, a draft DV Screening Protocol was developed for consideration by the HPCSA. This clinical guideline, later approved for implementation by the HPCSA (Annexure 1), would become the intervention implemented in Phase 2.

2.2.1 EiDM sampling of evidence

The evidence appraised for this systematic literature synthesis was based on electronic searches (in order of preference indicated by Table 3) for the period 1999-2011[16] using the following Cape Peninsula University of Technology[17] (CPUT) databases: (a) EBSCO Host (Health Source Consumer Edition, Health Source Nursing/Academic Edition and Medline), (b) PubMed, (c), Science Direct, (d) Google Scholar, (e) Google, (f) iol.co.za, (g) news24.com, (h) Sage Publications, (i) Cochrane Library, and (j) Medical Research Council.

Keywords included: "Domestic Violence, Domestic violence health care, Domestic violence prehospital, Domestic violence prevention, violence women, GBV, paramedic/prehospital role/duty" and "domestic violence South Africa". The hierarchy of evidence, relative to the question, is explained in Table 3, where qualitative and quantitative, primary and secondary

[16] The sampling in the EiDM is limited to 1999-2011 as this was an early study conception. Literature after 2011 is included in this Literature review following the EiDM discussion (2.3 onwards) using narrative analysis.

[17] CPUT and DUT are the study sites with academic databases and EMS programmes, but CPUT was chosen as the author had staff access.

and non-research is listed in order of preference. This resulted in the selection of systematic reviews and/or meta-analysis of trials and/or studies revolving around domestic violence screening tools and/or interventional/prevention strategies. The next choice was for reviews of interviews and or focus groups exploring the benefits of interventions by health care providers regarding incidences of domestic/GBV prevention. Primary research (i.e. not review articles) was next and was followed by contextual or experiential non-research evidence. Of 164 articles, 53 were included.

Table 3: Hierarchy of Evidence

Secondary Research (Quantitative and Qualitative)		
i.	**Quantitative:**	Systematic reviews and/or meta-analysis of trials and/or studies revolving around domestic violence screening tools and/or interventional/prevention strategies.
ii.	**Qualitative:**	Reviews of interviews and/or focus groups exploring the benefits of health care provider intervention regarding incidences of DV/GBV.
Primary Research (Quantitative and/or Qualitative)		
iii.	**Quantitative:**	Experimental and/or descriptive studies comparing screening tools and its efficacy for domestic/GBV in the prehospital or emergency department environment. Experimental and/ or descriptive studies comparing domestic violence training/educational interventions for health care providers for screening/victim identification.
iv.	**Qualitative:**	Interviews or focus groups exploring the experiences of victims after interventional measures specific to domestic/GBV prevention.
Non-Research[18] (Particularly South African Context)		
v.	**Experiential:**	The views by health care providers and health care receivers regarding the interventions for GBV/domestic violence prevention.
vi.	**Contextual:**	Qualitative: Reports/reflections/experiences on the interventions/ prevention measures for gender-based/domestic violence Quantitative: Reports/audits comparing interventions or policies for gender-based/domestic violence prevention. Theoretical: Political, Economic, Environmental, Social, and Technological barriers in the acceptability of domestic/GBV prevention

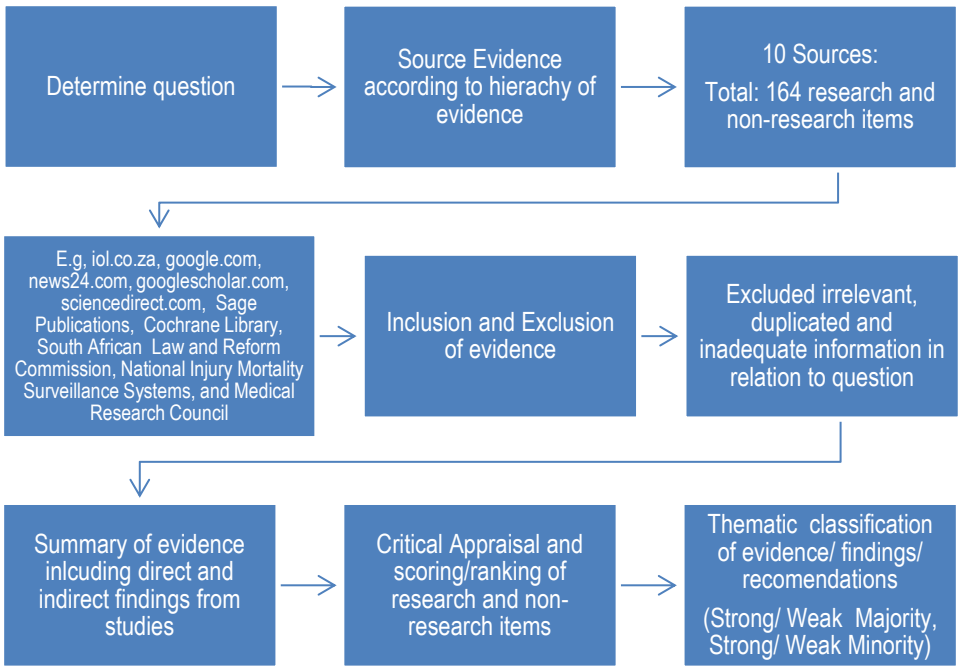
[18] Non-research evidence is contextual or experiential evidence that is not published in peer-reviewed academic journals following research processes but may still hold relevance to the question.

2.2.2 EiDM: Collection and Critical Synthesis of Relevant Literature

The complete practice of EBM comprises five major steps (Figure 5). Straus, Scott Richardson, Glasziou, & Brian Haynes (2008, pp. 3-4) set these out as: 1) converting the need for information into an answerable question, 2) tracking down the best evidence with which to answer that question, 3) critically appraising that evidence for its validity, impact and applicability, 4) integrating the critical appraisal with our clinical expertise, patient biology, values and circumstances, 5) evaluating our effectiveness and efficiency in executing steps 1-4 and seeking ways to improve them.

The approach to access information is determined by how research evidence is organised and what access is available: Original published articles in journals (Studies), Cochrane reviews (Syntheses), Evidence-based journal abstracts (Synopses) and computerised decision support (Systems) (Straus, et al., 2008, p. 3). The CPUT database was purposively selected as this institution is a HPCSA-accredited EC education provider. To enable the tracking of best evidence, relative to the question, the sampling followed the hierarchy of evidence (Table 3). Relevant articles were downloaded and saved to source folders to create a desktop repository.

Figure 5: Evidence-informed Decision Making (EiDM) Process



Upon screening of title, abstract and/or content, 111 of the 164 articles were excluded due to irrelevance, duplication and poor/inadequate information relative to the question. The appraisal criteria are made up of three major sections (Relevance, Robustness and Bias). The individual criteria within each section were scored. High scores were given when evidence was clear, relevant, reliable, consistent, unbiased and had minimal conflict of interest. Relevance criteria included the research question being asked; the topic/field in which the question was asked and the degree of applicability of the evidence (context) in relation to RSA and emergency health care. Robustness or reliability criteria included the sample size of the study, 'Measures' indicating the appropriateness and consistency of the tools/processes used to document and locate findings and 'Analysis' criteria referred to the process of analysis used. Bias criteria included the integrity and motive of the author and the institution. Scores were then ranked with the median score delineating strong evidence from weak evidence (Annexure 2). Majority themes were commonly recurring whilst minority themes were not. The synthesised themes of the EiDM process presented below, is summarised in Table 4. The ranked article synopsis is represented in Annexure 3 whilst Annexure 4 provides the checklist for process quality.

2.2.3 Strong EiDM Themes[19]

2.2.3.1 Educational intervention increase health care providers' understanding of DV and improves screening for DV:

Increased training in assisting DV victims in the out-of-hospital setting may allow earlier intervention, before the violence escalates to serious harm (McCoy, 1996). These findings were seen in 876 cases in the Boston EMS population (Husni, Linden, & Tibbles, 2000). EMS providers are in a unique position to help DV victims by treating injuries, providing support, resources and information or by alerting the hospital (Mason et al., 2010).

Basic knowledge-building exercises such as general knowledge surveys on DV and post instruction tests have shown marked improvement about DV, which may have some influence in increased screening for DV in EC contexts (Weiss, Ernst, Blanton, Sewell, & Nick, 2000). Specific screening questions were associated with an increase in IPV identification rates (Waalen, Goodwin, Spitz, Peterson, & Saltzman, 2000). The literature

[19] Themes ranked above the median appraisal score for relevance, rigour and bias

also promotes reliable methods for assessing service provider characteristics and their requirements for additional training (Maiuro, et al., 2000).

2.2.3.2 The development and use of screening tools, guidelines or procedures for DV improves intervention and is acceptable to EC providers:

The evidence is that EC personnel believe that disease and injury prevention should take place during emergency calls (Lerner, Fernandez, & Shah, 2009). The development of an IPV screening tool and clear organisational implementation measures could potentially see early intervention increase due to prehospital identification and reporting (Edlen, Williams, & Williams, 2010; Datner, Shofer, Parmele, Stahmer, & Mechem, 1999).

There are a number of dimensions to consider: (a) the use of screening tools may provide optimal treatment, identification and screening procedures that are critical to timely interventions in DV cases (Wadman & Mulleman, 1999); (b) referrals to DV support services as the primary outcome is an intermediate outcome to reduce violence and improve quality of life and mental health for DV victims who are referred (Gregory, et al., 2010); (c) physical assessment and interviewing by healthcare providers including emergency personnel (Wadman & Mulleman, 1999) and (d) screening of pregnant patients who include the presence of certain clinical features (Boergerhoff, Gerberich, Anderson, Kochevar, & Waller, 1999; IOL News, 2008a). Also recommended is the addressing of fears of health care workers when dealing with DV cases and encouraging “team approaches” (Kilonzo, et al., 2009).

When considering evidence-based policy development, data quality is paramount. Barriers to data quality are cited throughout the literature and include the following: lack of organizational support; characteristics of the violence-related data elements; design of the ambulance report form; and paramedic knowledge, attitudes, and behaviours regarding data collection (Boergerhoff et al., 1999). In addition, health sector screening is a priority (Martin & Jacobs, 2003) as it facilitates access to care. A computerised system for screening emergency department (ED) patients for IPV did not endanger victims either in the hospital or after they were discharged (IOL News, 2008b). More than one third of abuse victims reported they had sought help based on the information they had received. There

are high rates of unrecognised abuse among ED patients, and centres should consider screening for it (IOL News, 2008b).

2.2.3.3 Victims perceive DV screening to be acceptable:

Women believed that being asked about IPV could be an opportunity for women in abusive relationships to access services and help (Christofides & Jewkes, 2010). Discussion of sexual violence by their health care providers was experienced as nonintrusive and helpful (Littleton, Berenson, & Breitkopf, 2007). A majority of women reported favourable reactions after being asked questions about DV exposure (Magen, Conroy, & Del Tufo, 2000).

2.2.3.4 The barriers to DV protocol adherence include educational, linguistic, cultural, institutional and personal factors:

Educational, linguistic, and cultural factors appear to affect the likelihood that health care providers discuss particularly sexual violence with their patients (Littleton et al., 2007). There are many obstacles in the DV screening and referral protocol. A long-term approach to protocol adherence in the ED is needed (Waller, Hohenhaus, Shah, & Stern, 1996). Providers received little training in DV. Nurses, physicians and social workers in trauma centres were seen to rarely screen for DV (Davies & Edwards, 1999). There are institutional and personal barriers impeding intervention for victims of DV (McGrath, et al., 1997).

2.2.3.5 HIV-testing and prophylactic care[20] for DV and rape victims are prerequisites for comprehensive care:

HIV-testing and DV inquiry are important steps in identifying victims and referring them for appropriate care. There needs to be a linkage in the form of cross-referrals using standardised referral pathways and guidelines, protocols and medico-legal procedures in order to achieve comprehensive care for post-rape victims (El-Bassel, et al., 2006).

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[20] PEP (post-exposure prophylaxis) means taking antiretroviral medicines after being potentially exposed to HIV to prevent becoming infected. PEP should be used only in emergency situations and must be started within 72 hours after a recent possible exposure to HIV, such as from rape.

2.2.4 Weak EiDM Themes[21]

2.2.4.1 Educational intervention increases understanding of DV and its early detection and treatment in the emergency setting:

Environmental enabling factors are relatively easy to initiate and are proven to increase inquiries about DV, as well as a small increase in case findings (Littleton et al., 2007; Thompson, et al., 2000). Endeavours such as the DNA Project highlight the forensic role EC providers can play (DNA Project, 2011). A voiced desire of the participants in a study about women's perspectives of the ED of a hospital was for sincere interaction with a professional helper, and recognition of the victim's lack of knowledge regarding shelters or protective services (Mayer, 2003).

When healthcare providers understand the context of DV and victims perceived needs, the ED will better serve female victims (Mayer, 2003). Improving levels of knowledge about DV is important in detecting and treating the DV victim (Weiss, Ernst, Blanton, Sewell, & Nick, 2000). Study results improved from 59% to 70% correct after 3-hours of instruction but an understanding of DV was seen for only 4 of 11 questions. These results indicate the need for more instruction on DV for EC providers (Weiss et al., 1999).

2.2.4.2 Routine, universal screening for DV is supported in the emergency setting:

A simple, direct questionnaire significantly improves the detection rate of DV in the ED. Direct questioning requires minimal time and should be incorporated into the patient assessment (Morrison, Allan, & Grunfeld, 2000). Routine screening for abuse is an essential element of history taking. Awareness of the patient's experiences with DV is required to keep appropriate adjustments in patient management (te Kolstee, Miller, & Knaap, 2004) and both high and low risk patients should be screened for DV (Datner et al., 2007). Patients seen in an ED must be identified as a population at risk for DV and these situations can be identified only by a systematic assessment using a standardized questionnaire (Witting, et al., 2006).

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[21] Themes are ranked below the median score for relevance, rigour and bias

The Domestic Violence Act 116 provides case definitions for DV (Domestic Violence Act 116, 1998; IOL News, 1999a). Pregnant women presenting to the ED may be at greatest risk of current DV and preterm birth (IOL News, 2008a) if they are young, have less than a high school education, have a prior diagnosis of trichomonas[22], and report current marijuana or alcohol use (Lejoyeux, et al., 2002).

2.2.4.3 Barriers to DV Screening include practitioner factors, institutional factors and lack of research on intervention outcomes:

Providers rarely screen for DV. There are institutional and personal barriers impeding intervention in victims of DV (McGrath, et al., 1997). It is unknown whether screening for DV in EDs, followed by counselling, referrals, and support, can change the risk of future DV-related injuries to those patients (Houry, et al., 2004). Practitioners should familiarise themselves with these barriers (Gremillion & Kanof, 1996) and the socio-political challenges of DV intervention (Vetten, 2005).

2.2.4.4 Regulatory and other social agencies should/can develop screening tools:

Violence is frequently used to resolve a crisis of male identity, at times caused by poverty or an inability to control women (Jewkes, 2002). As such, health care workers, police officers, paramedics, social workers, and public health officials should work together to develop screening protocols for systems that will be the most effective for victims (Datner et al., 1999).

2.2.4.5 DV screening is effective for DV detection in the emergency setting:

A simple, direct questionnaire significantly improves the detection rate of DV in the ED (Morrison et al., 2000). A three-question DV screen identifies a subset of women in the ED

[22] Trichomonas: A single-celled protozoan parasite best known in medicine because one species causes vaginitis (vaginal inflammation). Infection with trichomonas (trichomoniasis) is the most common curable sexually transmitted infection (STI) in young sexually active women. The species of trichomonas responsible for STI is Trichomonas vaginalis.

who are at high risk for subsequent physical violence and verbal aggression (Houry, et al., 2004). No significant differences were found between different methods of screening on any measurement, including refusals (Furbee, Sikora, Williams, & Derek, 1998). The out-of-hospital use of a DV screen for assessing patient risk is probable (Weiss, et al., 2000).

Table 4: EiDM Themes

Hierarchy of Themes	Synthesised Themes
Strong[23]Majority[24]	• Educational intervention increase health care providers' understanding of DV and improves screening for DV • The development and use of screening tools, guidelines or procedures for DV improves intervention and is acceptable to EC providers
Strong Minority	• Victims perceive DV screening to be acceptable • The barriers to DV protocol adherence include educational, linguistic, cultural, institutional and personal factors • HIV-testing and prophylactic care for DV and rape victims are prerequisites for comprehensive care
Weak[25] Majority	• Educational intervention increases understanding of DV and its early detection and treatment in the emergency setting • Routine, universal screening for DV is supported in the emergency setting
Weak Minority	• Barriers to DV Screening include practitioner factors, institutional factors and lack of research on intervention outcomes • Regulatory and other social agencies should/can develop screening tools • DV screening is effective for DV detection in the emergency setting • DV awareness by health care providers is a clinical and epidemiological imperative

2.2.4.1 DV awareness by health care providers is a clinical and epidemiological imperative:

Awareness of the patient's experiences with DV is required to make appropriate clinical adjustments in the patient management (Jewkes, Levin, & Penn-Kekana, 2002). Violence is

[23] Themes ranked above the median appraisal score for relevance, rigour and bias.

[24] Majority themes were commonly recurring themes whilst minority themes were not.

[25] Themes ranked below the median appraisal score for relevance, rigour and bias.

a widespread and serious public health problem in RSA, affecting both women and men in their intimate partnerships (Gass, Stein, Williams, & Seedat, 2011; IOL News, 1999b). A history of alcohol abuse by the male partner, as reported by the female partner, was the strongest predictor for acute injury from DV (Kyriacou, McCabe, Anglin, Lapesarde, & Winer, 1998).

2.3 DV Conceptions and Consequences[26]

The possible links, factors and causes of DV (IPV and family violence) are important in the conceptualisation and explanation of the phenomenon. Patriarchy is the system of society in which men hold the power and women are largely excluded. Hegemonic masculinity can be described as practices by both men and women within societal institutions to perpetuate the subordination of males over females. Patriarchy and hegemonic masculinity are posited as causes of IPV by the feminists whilst a sociological perspective of violence suggests its historical construction: through prior experiences of violence and unequal resources in relationships (Ali & Naylor, 2013).

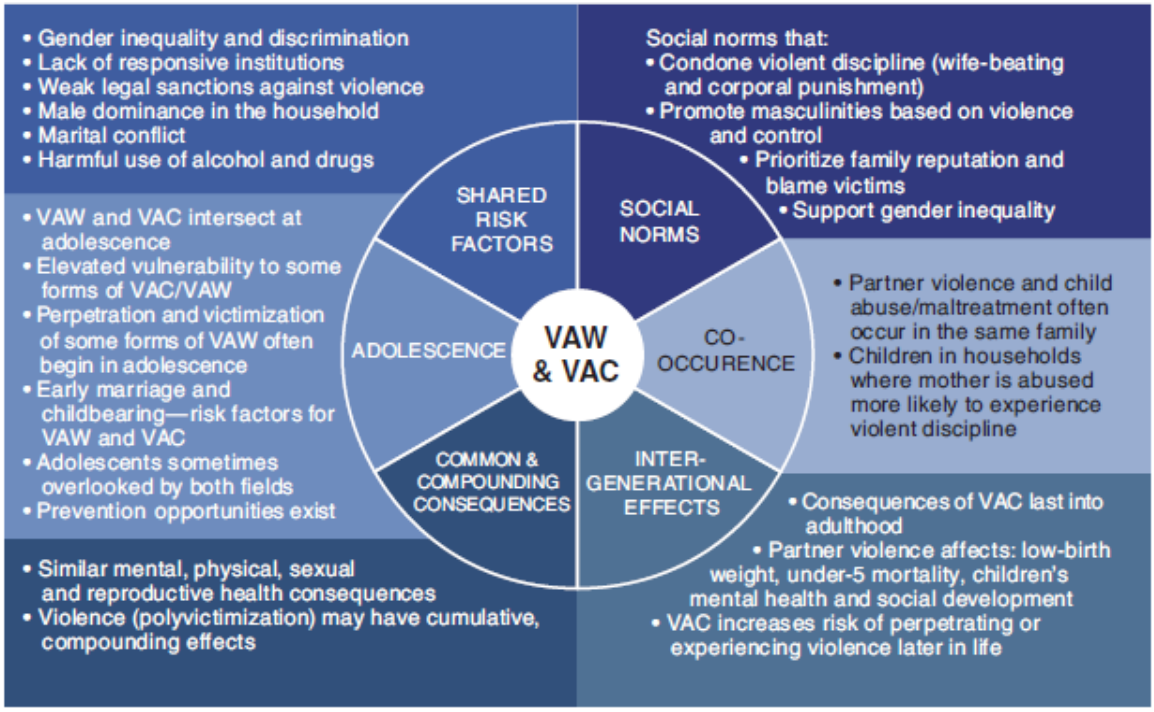
Ecological framework factors that lead to violence on multiple levels, inter-relate individual, relationship, societal and structural causes. IPV causes are complex, interrelated, contextual and also non-linear (Jewkes, 2002; Rees, Zweigenthal & Joyner, 2014c). This complexity is illustrated in Figure 6.

Violence against women (VAW) and violence against children (VAC) are two manifestations of DV that share risk factors, such as gender inequality and discrimination (Figure 6). This is exacerbated by social norms that condone violence and promote inequality. Abuse of partners and children often occur in the same home. As violence is entrenched as normal, it may be inter-generational, where victims grow up to become perpetrators. Adolescence may increase vulnerability to certain abuses due to early sexual practices, early marriage, childbearing and alcohol and drug experimentation. Both vulnerability in adolescence and intergenerational effects have similar physical, sexual and reproductive health consequences which if repeated, may

[26] Having completed the report on the EiDM, the traditional narrative analysis literature review begins here.

have cumulative effects on the probability of violence perpetuation (Guedes, Bott, & Garcia-Moreno, 2016).

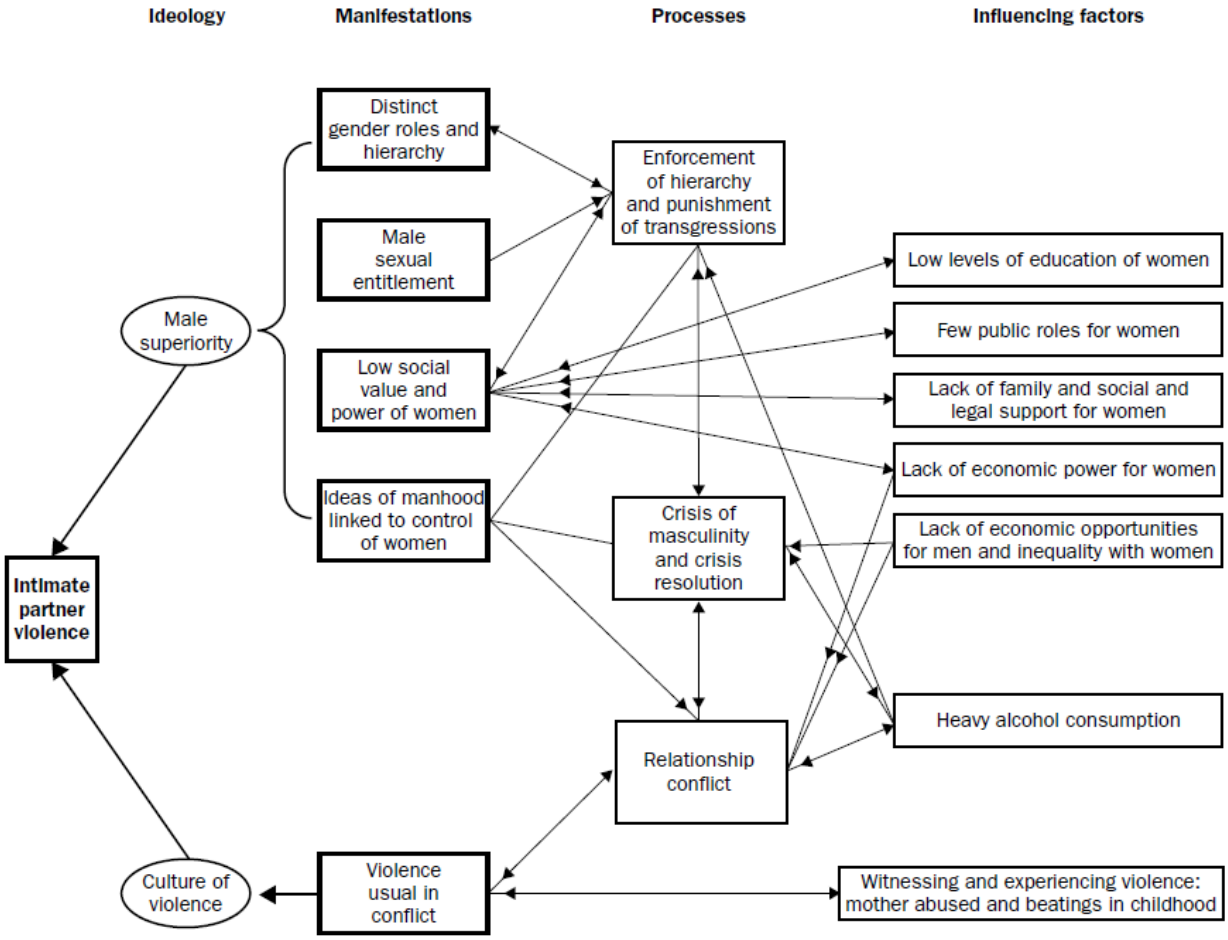
Figure 6: Intersections between violence against women (VAW) and violence against children (VAC) (Guedes, Bott, & Garcia-Moreno, 2016, p. 4)



Moreover, Jewkes (2002) theorises two community-level factors, prevalent in South African society that function as necessary causes of IPV: gender inequality (male superiority) and social acceptance of the use of violence for conflict resolution (Figure 7). Manifestations, processes and influencing factors of IPV are mapped in Figure 7. The figure below suggests that male superiority manifests as distinct gender-roles and hierarchy, male sexual entitlement, low social value and power of women and ideas of manhood linked to the control of women. The use of violence as usual in conflict resolution perpetuates IPV ideology.

The Duluth Model [27] provides some explanation for DV perpetration (Domestic Violence Intervention Programmes, 2011). It posits that the need for power and control is the motive for DV. Perpetrators will use economic abuse to control dependency; coercion and threats of harm; intimidation, such as that caused by displaying a weapon; emotional abuse to humiliate and erode self-esteem; isolation to control external influence; minimising the abuse; using children as leverage and imposing of male privilege (Domestic Violence Intervention Programmes, 2011). It also postulates that gender inequality and hegemonic masculinity (in the form of male privilege) drives the need for or entitlement to power and control.

Figure 7: 'Causes' and Factors associated with IPV (Jewkes, 2002)



[27] An approach to thinking about community engagement to end DV.

Joyner and Mash (2012a) explain that:

> Fatal outcomes include femicide, suicide, maternal mortality, antepartum haemorrhage, abortion, stillbirth and AIDS. Non-fatal consequences comprise burns, fractures, chronic pain syndromes and mental illness, problems with hearing and sight, arthritis, seizures, headaches, sexually transmitted infections (STIs), HIV, and pelvic inflammatory disease. Indirect consequences of IPV include stomach ulcers and other gastrointestinal disturbances, heart disease, hypertension, unwanted pregnancy, low birth weight and premature labour (Joyner & Mash, 2012a, p. 1).

It seems, the high mortality, morbidity and risk factors for poor health outcomes for DV victims are a function of chronic physical trauma, psychological trauma and stress, as well as controlling behaviours that result in limited reproductive control and lack of autonomy in healthcare seeking (World Health Organisation, 2013a; Rees, Zweigenthal, & Joyner, 2014c).

2.4 Prevalence of IPV/DV

A high burden of lifetime IPV among ever-partnered women: from 15% in Japan to 71% in Ethiopia, was a landmark finding from a multi-country study commissioned by the World Health Organization (WHO) to assess the global burden of IPV between 1998 and 2004 (Garcia-Moreno, 2006). More recently, a systematic review of studies between 1998 and 2011 provided 412 estimates spanning 56 countries and found that in 2010 7.2% of women worldwide had ever experienced non-partner sexual violence (Abrahams, et al., 2014):

> Research into intimate-partner violence in the past decade…has shown that a substantial proportion of sexual violence occurs within marriage and other intimate partnerships. Sexual violence perpetrated by people, such as strangers, acquaintances, friends, colleagues, peers, teachers, neighbours, and family members is referred to as non-partner sexual violence (Abrahams, et al., 2014, p. 1).

In the UK (Walby & Allen, 2004) and Australia (Rees, et al., 2011) more than a quarter of women are exposed to IPV at some time in their lives. WHO estimates that 30% of women globally who have been in a relationship have experienced physical or sexual IPV; and in the WHO Africa region, this estimate escalates to 36.6% [95% CI 32.7; 40.5%] (World Health Organisation, 2013a). In a large multi-National study (Canada, USA, Denmark, Netherlands and India), the prevalence of lifetime prevalence of IPV by women attending orthopaedic fracture clinics (in a year) was 34.6% (Sprague, et al., 2013). In RSA, interpersonal violence is the second-highest contributor to years of life lost and, in women,

IPV accounts for 62.4% of this burden (Norman, et al., 2007). This means that whilst RSA is a violent society, almost two thirds of the burden to women is from intimate partners.

2.4.1 Pregnancy and IPV

Maternal mortality and morbidity are indicative of a country's health system responsiveness. Improvements in seeking justice in the health system must consider the most vulnerable of the society (Sen, 2010). The prevalence of IPV among pregnant women in Africa is one of the highest reported globally. It ranges from 2% to 57% (n = 13 studies) with meta-analysis yielding an overall prevalence of 15.23%. The major risk factors included HIV infection, history of violence and alcohol and drug use (Shamu, Abrahams, Temmerman, Musekiwa, & Zarowsky, 2011). At a service level, the authors expect that this finding could influence health workers to screen pregnant women for IPV and lead to effective referrals and interventions. An earlier study amongst 1044 African-American women concluded that a "relatively brief intervention during pregnancy had discernible effects" on IPV (such as less likely recurrent episodes of IPV victimization) and pregnancy outcomes [such as fewer preterm infants and an increased mean gestational age] (Kiely, El-Mohandes, El-Khorazaty, & Gantz, 2010). Screening for IPV as well as other psychosocial and behavioural risks and incorporating similar interventions in prenatal care was strongly recommended.

A prospective cohort study conducted in north-eastern Brazil in 2005-6 found the incidence of violence during postpartum was 9.3% [n = 50] (Silva, Valongueiro, de Araújo, & Ludermir, 2015). Of 1057 women, 539 were re-interviewed up to 12 months postpartum. As the study sought to estimate the incidence and identify risk factors for IPV during postpartum the 518 women who reported IPV before and during pregnancy were excluded to estimate the incidence. Whilst this exclusion is justified in terms of the study objective, it represents a considerable prevalence of antepartum DV and DV incidence during pregnancy. The study is helpful since it validates the use of cohort designs in IPV incidence estimation. It also presents a conceptual model for postpartum IPV risk factors that interrelates socio-demographic factors, behavioural factors and relationship dynamics (Silva, Valongueiro, de Araújo, & Ludermir, 2015).

In a cross sectional survey administered in 2012 in West Africa, 61.8% (N = 136) reported IPV (Idoko, Ogbe, Jallow, & Ocheke, 2015). Notwithstanding the small sample, the high

prevalence of IPV may be explained by the high risk nature of the participants as the study site was the only tertiary facility in the country. In this study, pregnancy was not found to be protective against IPV.

> The most common forms of abusive behaviours experienced by the women were verbal (60%). While 55% reported physical violence, 22% of them had been forced to engage in a sexual act against their will. Most of the women (59%) did nothing about the abusive behavior and only 4% reported the matter to the police (Idoko, Ogbe, Jallow, & Ocheke, 2015, p. 3).

If high risk pregnant patients have higher IPV prevalence, there may be motivation for DV detection to be trialled amongst different cohorts of patients presenting to the EMS in RSA, for whom, DV prevalence has never been documented, and where patients are at higher risk of violence. An additional consideration is that only 45% of the global need for emergency obstetric care has been met and only 21% and 28% in low-income and lower-middle income countries respectively. It is alarmingly estimated that 951 million women of reproductive age do not have access to emergency obstetric care (Holmer, et al., 2015).

2.4.2 HIV and IPV

Of course, no literature review on DV prevalence can be complete without consideration of HIV associations. Women who experienced IPV were two to three times more likely to engage in transactional sex than women who did not (Dunkle, et al., 2004). Also, women who experienced IPV were six times more likely to use condoms inconsistently than those who had not (Pettifor, Measham, Rees, & Padian, 2004). Such risky behaviour is often the result of a lack of choice that is bred by coercive contexts. Available evidence from a recent systematic review and meta-analysis (28 studies involving 331,468 individuals in 16 countries that included four from RSA) suggests a moderate statistically significant association between IPV and HIV infection among women (Li, et al., 2014).

In South Africa, sexual IPV was significantly associated with HIV amongst 3865 15-24 year old respondents to a national household survey [AOR (95% CI): 1.17 (1.03, 1.32)] (Speizer, et al., 2009). Any type of IPV (whether lifetime, physical or sexual IPV in the past three months) amongst 1099 15-26 year olds was significantly associated with HIV [adjusted IRR (95% CI):1.51 (1.04, 2.21)] (Jewkes, Dunkle, Nduna, & Shai, 2010). Consequently health workers should support DV victims to seek HIV prevention and treatment. “To further elucidate the strength of the association between IPV and HIV infection among women”,

…the authors suggest "…there is a need for high-quality follow-up studies conducted in different geographical regions of the world, and among individuals of diverse racial/cultural backgrounds and varying levels of HIV risks" (Li, et al., 2014). An analysis from The Nepal demographic health survey 2011 found that:

> Being exposed to [IPV] and getting signs and symptoms of sexually transmitted disease were found to be associated. Integration of [IPV] prevention and reproductive health programs is needed to reduce the burden of sexually transmitted disease among currently married women (Dhakal, Berg-Beckhoff, & Aro, 2014, p. 75).

This point to the importance of IPV prevention as a means of preventing sexually transmitted disease.

2.4.3 Psychiatric Conditions and IPV/DV

Psychiatric conditions, it would seem, is also not protective of and may be a risk factor for DV. Among a nationally representative sample of Australian women, GBV was significantly associated with mental health disorder, dysfunction, and disability (Rees, et al., 2011). A total of 1218 women (27.4%) reported experiencing at least one type of GBV. For women exposed to 3 or 4 types of GBV (n = 139), the rates of mental disorders were 77.3% (Rees, et al., 2011). Psychiatric disorders (including anxiety, depression, post-traumatic stress disorder, eating disorders and psychosis) can increase vulnerability to DV, and that DV is associated with both risk and chronicity of mental disorder. The *British Journal of Psychiatry* in fact, reported on a systematic review of DV prevalence among psychiatric patients (Oram, Trevillion, Feder, & Howard, 2013) and found that the median prevalence of lifetime partner violence reported in high-quality papers was 30% (range: 26–39) among female in-patients and 33% (range: 21–53) among female out-patients. Among male patients, one high-quality study reported a lifetime prevalence of 32% across mixed psychiatric settings. Non-partner family violence data was found to be deficient for this population of interest. This study is of relevance to EC in that it concludes that:

> Professionals who work with psychiatric patients across a range of settings should be aware of the high prevalence of victimisation among men and women in this group and be able to identify violence and respond appropriately to their patients' needs (Oram, Trevillion, Feder, & Howard, 2013, p. 98).

In a systematic review of prevalence studies between 1995 and 2006, only 16 (10%) were from Africa and of 134 articles sampled 12.2 % (n = 18) were located in the emergency department (Alhabib, Nur, & Jones, 2010). Whilst none of these studies used EMS data for

surveillance reasons, the mean lifetime prevalence of physical violence was highest (30–50%) in studies conducted in psychiatric and obstetrics/gynaecology clinics. “The highest rates of sexual violence were found in psychiatric, obstetric, and gynaecology clinics (30–35%) and, for emotional violence, the highest rates were found in accident and emergency and psychiatric departments (65–87%)” (Alhabib, Nur, & Jones, 2010, pp. 372-3). This is of interest as emotional abuse has been reported to be a risk factor for physical abuse (Capaldi, Knoble, Shortt, & Kim, 2012). Also termed psychological aggression, emotional abuse refers to acting in an offensive or degrading manner toward another, usually verbally, and may include threats, ridicule, withholding affection, and restrictions (O’Leary & Maiuro, 2001). Some degree of psychological abuse is very common (Shortt, et al., 2011) and tends to be associated with physical abuse. Moreover psychological abuse has been found predictive of physical abuse and to have severe impacts (O’Leary & Maiuro, 2001; Capaldi, Knoble, Shortt, & Kim, 2012). Whether the violent behaviour is intra-individual or extra-individual is the tension psychologists and psychiatrists must resolve in the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5):

> The American Psychiatric Association planning and research committees for the…DSM-5 (2013) have canvassed a series of new Relational disorders which include Marital Conflict Disorder without Violence or Marital Abuse Disorder (Marital Conflict Disorder with Violence). There is current considerable controversy over whether male-to-female marital violence is best regarded as a reflection of male psychopathology and control or whether there is an empirical base and clinical utility for conceptualizing these patterns as relational. (Chhikara, Jakhar, Malik, Singla, & Dhattarwal, 2013, p. 73).

Global Health Action and the *European Journal of Psychotraumatology* (Olff & Wall, 2014) jointly made a call for papers on (amongst others) intervention research to prevent or mitigate the effects of IPV, at a structural, community, relational, or individual levels, including health services. Rees, Zweigenthal, & Joyner (2014b) responded with: “How should service provider’s best address IPV as part of their service delivery?” They proposed a three-tier model of implementation starting with a primary health care provider conducting case finding and clinical management that includes treatment of injuries, forensic documentation (J88 form, or appropriate documentation in the medical record), identification and treatment of sexually transmitted infections, as well as offering of pregnancy tests or family planning as appropriate, and offering of HIV testing. This is followed by tier two where an IPV champion (a social worker) coordinates the assessment, intervention and an empowerment group. The community serves as the last tier in the form

of support groups. In an editorial, the same authors (Rees, Zweigenthal, & Joyner, 2014b) advocate for inter-sectoral responses, access to services and contextually appropriate evaluations. This highlights the potential for EMS to 'widen access' to DV services and to do what it can as is 'context appropriate'.

2.4.4 Physical Trauma and DV Prevalence

> Domestic violence is a social and moral dilemma with significant health care liabilities. The increasing prevalence of domestic violence in trauma centers needs to be carefully scrutinized. It appears from the results of our study that there is a lack of proper screening and subsequent reporting of domestic violence, especially among adults and the elderly. Initiation of active screening and preventive measures, robust educational campaigns, and uniform screening strategies in trauma centers might help counter this silent epidemic (Joseph, et al., 2015, p. 1182).

Joseph, et al. (2015) performed a 6-year (2007-2012) retrospective analysis of the National Trauma Data Bank (NTDB): the largest collection of trauma index cases in the USA. A total of 2 910 122 trauma cases from 370 consistently reporting facilities were included in the analysis. A total of 16 575 patients were identified who experienced DV. The most common perpetrator of violence was a significant male relative (38%). Compared with patients who experienced other traumatic events, patients who experienced DV were younger (mean age of 16 years) versus 38 years for patients who experienced other traumatic events and were more often female. This means attention should be paid to this at-risk description. The overall reported prevalence of DV among trauma patients was 5.7 cases per 1000 trauma centre discharges. The prevalence of domestic violence increased among children (14.0 cases per 1000 trauma centre discharges in 2007 to 18.5 cases per 1000 trauma centre discharges in 2012. The rate of child abuse in this study was 17 cases per 1000 trauma centre discharges, higher than the national USA average.

According to the National Child Abuse and Neglect Data System, approximately 686 000 children were exposed to child abuse and neglect in 2012, and 1593 children were killed (US Dept of Health and Human Services; Administration for Children and Families; Children's Bureau, 2014). The annual rate of child abuse as reported by the US Department of Health is 10 cases per 1000 inpatients, with a decreasing trend in overall incidence of child abuse over the years (Centers for Disease Control and Prevention (CDC), 2015).

> Domestic violence is prevalent among trauma patients. Over the years, the reported prevalence of domestic violence has been increasing among children and adults, and continues to remain high among female trauma patients. A robust mandatory screening for evaluating domestic violence among trauma patients, along with a focused national intervention, is warranted (Joseph, et al., 2015, p. 1177).

Although the authors advocate for screening, they acknowledge the longstanding challenge of linking services to the identified victims. This challenge may be an opportunity for the EMS to take the initial service to the homes where violence resides.

On the premise that IPV is the leading cause of non-fatal injury to women worldwide and that musculoskeletal injury, often seen by orthopaedic surgeons, are the second most common manifestation of IPV, Sprague et al. (2013) aimed to establish the 12-month and lifetime prevalence of IPV in women presenting to orthopaedic fracture clinics. A team of 80 investigators did a cross-sectional study of a consecutive sample of 2945 female participants at 12 orthopaedic fracture clinics in Canada, the USA, the Netherlands, Denmark, and India. Participants who met the eligibility criteria anonymously answered direct questions about physical, emotional, and sexual IPV and completed two previously developed questionnaires (Women Abuse Screening Tool [WAST] and Partner Violence Screen [PVS]).

After doing a multivariable logistic regression analysis to investigate the risk factors associated with IPV, the authors reported an overall response rate of 85% (2,344 of 2,759). One in six women (455/2839, 16.0%, 95% CI: 14.7-17.4%) disclosed a history of IPV within the last year, and one in three women (882/2550, 34.6%, 95% CI: 32.8-36.5%) had experienced IPV during their lifetime. Forty-nine women (1.7%, 95% 1.3-2.2%) presented to their current clinic visit as a direct consequence of IPV, only seven of whom (14%) had ever been asked about IPV within the health care setting. Women in short-term relationships (OR 0.584, 99% CI·396-0.860, p=0.0001) were at increased risk of IPV and physical abuse in the past 12 months. Compared with women in Canada and the USA, those in the Netherlands and Denmark were at reduced risk of any abuse in the past 12 months, physical abuse in lifetime, and any abuse in lifetime (OR 0.595, 99% CI 0.427-0.830, p<0.000q; 0.630, 0.445-0.890, p=0.0001; and 0.464, 0.352-0.612, p<0.0001, respectively). The Prevalence of Abuse and Intimate Partner Violence Surgical Evaluation (PRAISE) is the largest prevalence study of abuse conducted in orthopaedics and finds that:

> Orthopaedic surgeons should be confident in the assumption that one in six women have a previous history of physical abuse, and that one in 50 injured women will present as a direct result of IPV. Our findings warrant serious consideration for optimizing fracture clinics to identify, respond to, and provide referral services for, victims of IPV (Sprague, et al., 2013, p. 99)

Of interest, increased IPV disclosure in ambulatory care settings suggests earlier disclosure or improved clinician competency in early detection. Data from a large health care organisation, over 15 years (2000-2015), showed an 18-fold increase in IPV identification (Young-Wolff, Kotz, & McCaw, 2016). Improvements in primary health care and behavioural (mental) health settings (rather than emergency departments) resulted in majority of the detections rather than increased exposure to IPV or increased membership. It is proposed that a systems model that leverages the entire health care system is necessary and may lead to more robust interventions when IPV is identified (Young-Wolff, Kotz, & McCaw, 2016). Interestingly, Pasqualone & Michel (2015) are of the view that forensic patients are 'hiding in full view' of emergency and critical care nurses.

> The majority of the victims of violence are being seen in emergency departments and critical care areas. This compels today's nurse to be educated in the proper recognition, interpretation, collection, documentation, and photo-documentation of the ramifications of violence and the associated forensic evidence (Pasqualone & Michel, 2015, p. 3).

A systematic review and meta-analysis of the pattern of physical injury associated with IPV in women presenting to the emergency department found unwitnessed head, neck, or facial injuries were significant markers for IPV. Conversely, extremity injuries were less likely to have been the consequence of IPV (Wu, Huff, & Bhandari, 2010)." Proponents for DV intervention in India are even of the view that DV is 'the dark truth of our society'.

> Medical professionals are in position to empower people, give advice, and refer them to appropriate services. The health care professional has not always met this role, with uneven quality of care, and in some cases misunderstandings about domestic violence. (Chhikara, Jakhar, Malik, Singla, & Dhattarwal, 2013, p. 74)

EMS, as the first point of contact with the community, may also encounter patients 'hiding in full view', and therefore have a duty to respond. The false expectation that the emergency nurse in the ED will satisfy these health needs can no longer be used as a defence of inaction by EMS, who all the while may yield some potential to alter 'the dark truth of our society'.

2.4.5 GBV in Complex Emergencies

2.4.5.1 War and Humanitarian Emergency settings

Notwithstanding that EC personnel also function in disaster and humanitarian settings, their everyday EMS exposure may resemble aspects of complex emergencies. Despite sexual violence in armed conflict being a crime against humanity, it "is being used as a method of war to brutalise and instil fear in the civilian population, especially women and girls" (United Nations Inter-Agency Standing Committee, 2005, p. iii). There are parallels and shared foundations between DV and global terrorism. In terms of human geography, DV is considered *"everyday terrorism"* (Pain, 2014), from which there is often no respite. The difference also lies in disproportionate state responses that undermine the impact of 'everyday terror'. "A Systematic Review of Prevalence Studies of Gender-Based Violence in Complex Emergencies" (Stark & Ager, 2011) cited an interesting implication for GBV programming and policy in emergency settings. It suggested that GBV in complex emergencies (brought about by war and humanitarian crises) receive disproportionate policy and programme attention.

> It found that rates of IPV tend to be quite high across all of the studies—much higher than most of the rates of wartime rape. These findings suggest that women are at the greatest risk for violence when they are in their own homes and suggest that GBV programs need to develop innovative strategies for reaching out to victims who suffer GBV in their own homes (Stark & Ager, 2011, p. 133).

This is hardly surprising if one considers that the tools of war, firearms in particular, are the weapons of choice in femicide and femicide-suicides (Graduate Institute of International and Development Studies, 2013).

Interestingly, the 'Small Arms Survey 2013', is subtitled: 'Everyday Dangers' as most contemporary armed violence occurs in non-conflict settings (Graduate Institute of International and Development Studies, 2013). Moreover, an estimated average of 42-60 per cent of lethal violence is committed with firearms worldwide and for every firearm-related homicide; there are three survivors of gunshot injuries. Notwithstanding the progress in responding to DV against women, children and the elderly, the management of patients subjected to violence while under the custody of legal enforcement agencies, or patients who have been victims of torture, is still not sufficiently standardized (Akar, Arbel, Benninga, Dia, & Steiner-Birmanns, 2014). The Istanbul Protocol of the United Nations may be a useful tool that can help health professionals recognise and treat cases of torture or institutional violence.

The report by Stark and Ager (2011) is not intended to undermine the wartime brutality against non-combatants, but rather to highlight the ongoing brutality against women and children in domestic, non-war settings. The Humanitarian Practice Network (Holmes & Bhuvanendra, 2014) reports that in Eastern Democratic Republic of the Congo, up to 40% of women have experienced sexual violence and that all of the armed forces involved in the conflict, including national and neighbouring government forces, have committed acts of rape and sexual violence.

> Rapes are often extremely brutal and it is common for victims to be gang raped, tortured and mutilated. Many rapes also occur in public settings, often with the forced attendance of victims' relatives. In a nationwide survey, 1.69–1.8 million women reported having been raped in their lifetime, including by armed forces, but significantly more (3.07–3.37m) reported experiencing IPV. As in all contexts, these figures are far from comprehensive given the lack of up-to-date statistics and the fact that many cases go unreported (Holmes & Bhuvanendra, 2014, p. 5).
>
> During the conflict in Liberia in 1999–2003, rape was systematically used as a weapon of war. Up to 75% of the total population of women were sexually violated or raped, and large numbers of women were abducted and forced to sexually service members of armed groups. Many women and girls were raped more than once, at different times and by different perpetrators, and some were forced to marry their abusers (Holmes & Bhuvanendra, 2014).

Given the attrition witnessed, South African EMS personnel are sought after in complex emergency settings due to their experience and scope of practice. They may therefore find themselves working beside perpetrators and victims of human rights abuses. But, EC providers employed in local EMS organisations, public or private, will also have exposure to community and domestic violence that is considered 'ordinary' (Eyewitness News, 2017). Given its complexity and demand from the health system, Young-Wolff, Kotz, & McCaw (2016) aptly describe IPV as a "wicked problem".

2.4.5.2 From Rescuer to Victim: Threats to Health Care Workers

Violence or other forms of danger against health care workers is not a uniquely South African problem. The World Health Organization in the World Health Report 2006 reported fear of violence in the workplace to be a leading cause of health care worker attrition globally (World Health Organisation, 2006b). Interestingly, EMS workers, and in particular, female EMS workers, are also directly vulnerable in both complex emergency settings (Dyer, 2006) and in everyday responses (Eyewitness News, 2017). In Ireland, 3 physical attacks on ambulance staff were reported weekly (The Irish News, 2017). In the UK, South

East Coast Ambulance Service trust data showed attacks rose yearly from 98 in 2011-12 to 184 in 2015-16 (BBC News, 2016). Such exposure to violence when attending scenes in the previous twelve months were documented by 75% (N = 1676) of Canadian paramedics (Bigham, et al., 2014).

The issue of health care and violence has been broadly recognized as a matter of significant worldwide concern. At the 67th World Health Assembly in May 2014, WHO Director-General Dr Margaret Chan stated that health workers are under attack as never before (World Health Organisation, 2014). The International Committee of the Red Cross (ICRC) (in collaboration with the Red Crescent Movement) initiated a campaign called "Health Care in Danger" to highlight the threats to health care workers and to improve the efficiency and delivery of effective and impartial health care in armed conflict and other emergencies. In armed conflict zones, the Geneva Convention, to which RSA is a signatory, is intentioned to offer protection to health care workers. Everyday acts of aggression toward EMS personnel in non-war time signifies the limitations of current criminal law that legally precludes such attacks in general, with no particular focus on the consequences of delaying or debilitating an emergency service. As the Criminal Procedure Act (Act 51 of 1977) is meant to protect all, perhaps it is our protective mechanisms that are poor. Minimizing reports of EMS attacks as random constitutes a denial of the problem, its consequences and pivotal role EMS plays in decentralizing health care.

> The Health Care in Danger campaign is an ICRC-led, Red Cross and Red Crescent Movement-wide initiative that aims to address the widespread and severe impact of illegal and sometimes violent acts that obstruct the delivery of health care, damage or destroy facilities and vehicles, and injure or kill health-care workers and patients, in armed conflicts and other emergencies (International Committee of the Red Cross, 2012).

Attacks on EMS staff reflect an escalation of such crimes in a community and can be sentinel surveillance of such an escalation. Reporting these incidents to national and provincial health departments is important for quantifying the problem. Protection of EMS personnel goes hand in hand with protection of ordinary members of a community or family. EMS personnel and other care-givers will not be any safer so long as the community level exposure to violent crime go unabated (South African Police Service, 2013). EMS is, after all, a microcosm of the broader society and cannot claim immunity from those criminal acts that community members live with on an everyday basis. Police-men and women, and

those in the Fire Service, are at equal or greater risk and the state bears the responsibility for caring for the caregivers. However, our society should not tolerate such risk to those who offer public protection and health care as it undermines the public interest. Rethinking EMS worker safety and protection must be on the agenda of EMS organizations and the state that bears the ultimate responsibility for caring for the care-givers. To this end, the ICRC recommends that concrete measures be taken to strengthen the protection of their health-care systems and their resilience in the face of crises such as ongoing violence toward EMS. These include (International Committee of the Red Cross, 2012):

- "Governments should review and, where necessary, revise their domestic legislation to protect health-care personnel and facilities, medical vehicles, and patients. Efforts to adopt national implementation measures should be increased…"
- "States, together with practitioners' organizations, are encouraged to share their challenges and best practices in order to develop stronger policies and practical means of implementation…"
- "States are encouraged to consider proposing a resolution of the United Nations General Assembly reaffirming the need to address violence against health-care workers and facilities, medical vehicles, and patients through preventive measures. The World Health Assembly should strengthen the role of WHO in supporting state efforts to enhance the resilience of national health systems" (International Committee of the Red Cross, 2012).

Indeed, a community of interest would auger well for the advocacy of health worker safety. This implies, the HPCSA, Departments of Health, EMS organisations, professional societies, social development and criminal justice entities must work collaboratively toward violence reduction (with a view to elimination) and safety provision. Defining the EC role play in ensuring safer communities in which we practice is a good start to prevent caregivers from becoming victims and from services being disrupted, thereby affecting the constitutional promise of access to health care (Constitution of the Republic of South Africa, Act 108 of 1996). It is to date unknown how EC providers functioning in complex emergencies or chronic exposure to personal risk affects their responses to GBV cases. It is under these conditions that EC responses to GBV cases must be engaged with on the EC research agenda.

2.5 Forensic Medicine Considerations and Imperatives

Given the high South African mortality from GBV (Mathews, et al., 2004; Abrahams, et al., 2013) there are forensic pathology and forensic medicine implications for EC. First, a case

study is presented that highlights the importance of context to a chief complaint. Then, the linkage of non-fatal strangulation (NFS) with IPV is explored.

Barefoot & Galvan (2013) present a case study of a geriatric patient that presented to an emergency room (in Texas, USA). The first visit was triaged by a nurse (untrained in forensic examination) who screened for DV by asking about safety in the home, but did so in a manner that undermined the enquiry. She was of the incorrect assumption that the patients many injuries were from repeated falls (according to the husband). Her initial triage (that precluded DV) led to other members of the medical team anchoring on the misdiagnosis of injury from falls and a premature discharge. This occurred in the context of 29% of violence perpetrated against women by a lone offender or being committed by someone they were intimately involved with, such as a husband or boyfriend. A reported 102 cases of femicide were recorded in 2011 according to the Texas Council on Family Violence (Barefoot & Galvan, 2013). This illustrates the importance of appreciating the mortality context of DV. The same patient later visited another emergency department and was screened by a forensic nurse who detected the history of DV and set about a chain of events that led to the correct medical care of the patient, cessation of abuse and the activation of the criminal justice system that held the husband to account with the evidence collected by the forensic nurse.

The report demonstrated the failure of one system and success of another in protecting victims from further harm and promotion of justice through health institutions. The distinguishing feature was the presence of a forensic professional, in the form of a trained forensic nurse. It is clear that health care providers have a direct role to play when treating a DV victim. The Forensic Compliance Evaluation Project (2013) found it far more typical for victims of non-stranger rapes to initially seek out a close friend or relative, a health care provider, or a victim advocate rather than law enforcement, thereby reinforcing the importance of the first responder accessibility and attending demeanour.

> A 2012 Special Report from the U.S. Department of Justice's *National Crime Victimization Survey* determined that from 2006 to 2010, a greater percentage of victimizations perpetrated by someone the victim knew well (62%) went unreported to police, compared to victimizations committed by a stranger (51%) (Bureau of Justice, 2012). (Forensic Compliance Evaluation Project, 2013, p. 1).

Whist strangulation falls within the realm of the forensic pathologist; non-fatal strangulation (NFS) is seen in forensic medicine. The prevalence, risk factors, signs and symptoms of

NFS in women referred to a Sexual Assault Resource Centre following recent sexual assault was reported in a cross-sectional study conducted in Western Australia (Zilkens, et al., 2016). Data used was routinely collected at time of forensic examination of women (age ≥ 13 years) between 2009 and 2015. Of 1064 female sexual assault cases; 79 (7.4%) involved non-fatal strangulation (NFS) during the sexual assault.

> "Of women assaulted by an intimate partner, 22.5% gave a history of NFS compared to less than 6% of women assaulted by other assailant types. Of all sexual assaults with NFS, intimate partners were the assailant in 58.2% of cases, whereas in sexual assault cases without NFS, intimate partners were the assailant in 15.9% of cases." (Zilkens, et al., 2016, p. 1)

Interestingly, external physical signs of NFS were absent in 49% of those who gave a history of NFS, hence asking specifically about it and believing such history is crucial.

> Odds of NFS were 8.4 times higher in women sexually assaulted by an intimate partner compared to women assaulted by an acquaintance/friend and 4.9 times higher compared to women assaulted by a stranger…Other factors associated with NFS during sexual assault included deprivation of liberty, verbal threats, being assaulted in the woman's home and use of additional blunt force. External physical signs of NFS were absent in 49.4% of all NFS sexual assault cases (Zilkens, et al., 2016, p. 1).

Zilkens, et al. (2016, p. 1) identifies and quantifies NFS risk factors in female sexual assault and highlights the strong association with intimate partner sexual assault. The authors conclude that: "Greater awareness of NFS in sexual assault should lead to improvement in medical screening, forensic management and safety risk assessment by sexual assault and domestic violence services, emergency departments and police."

Whilst victims of DV are by its nature, disempowered, victims of IPV may take various actions to protect themselves from their abusive partner. Receiving medical treatment however is not protective of further violence. An examination of the association between abused women's (N = 755) protective strategies at baseline and her partner's threats, stalking, and moderate and severe violence 8 months later (Messing et al., 2016) revealed the following:

> Emergency domestic violence shelter and orders of protection significantly reduced subsequent abuse. Receiving medical treatment was associated with a significant increase in violence, and security devices (e.g., mace, changing locks) with an increase in stalking. Safety planning and other strategies had no statistical association with abuse at follow-up. Future research should continue to examine the efficacy of safety strategies (Messing, O'Sullivan, Cavanaugh, Webster, & Campbell, 2016, p. 1).

It is an indictment on the medical community that despite the provision of medical treatment, it is not protective of further violence. Forensic medicine knowledge and processes may enhance diagnostic accuracy, improve patient safety and practitioner accountability and improve care efficacy.

2.5.1 Prevalence of IPV-related Homicide

GBV has a considerable prevalence globally (World Health Organisation, 2006a) but it is the RSA that has recorded the highest femicide rate in the world. A retrospective National Study of Female Homicide in RSA (Mathews, et al., 2004) found that 8.8 per 100 000 women 14 years and older were killed by an intimate partner in 1999. This was the highest femicide rate ever reported in the world. This implied that four women per day were killed by an intimate partner or that one woman was killed every six hours by an intimate partner. Also where the woman was killed by a known perpetrator, it was an intimate partner that was responsible for killing one in every two such women. The South African mortality rates from interpersonal violence was “7 times the global rate” (Norman, Matzopoulous, Groenewald, & Bradshaw, 2007, pp. 695-702) and was the second leading cause of healthy years of life lost (Norman, et al., 2010). By comparison, according to Statistics Canada, there were 90,300 victims of IPV in 2013, and approximately every five days someone is killed by their intimate partner (Stachera, Taylor, & Konkin, 2016). A systematic review on the global prevalence of IPV-related homicide found that at least one in seven homicides globally and more than a third of female homicides are perpetrated by an intimate partner:

> Such violence commonly represents the culmination of a long history of abuse. Strategies to reduce homicide risk include increased investment in [IPV] prevention, risk assessments at different points of care, support for women experiencing intimate partner violence, and control of gun ownership for people with a history of violence. Improvements in country-level data collection and monitoring systems are also essential, because data availability and quality varied strongly across regions (Stöckl, et al., 2013, p. 859).

Mortality may result from homicide, or indirectly through suicide, maternal causes and an association with HIV (Dunkle, et al., 2004). Increased morbidity results from increased mental disorders, injuries, increased chronic conditions and physical complaints and reproductive health problems, including HIV and other sexually-transmitted infections (World Health Organisation, 2013a; Rees, Zweigenthal, & Joyner, 2014c).

The nature of a homicide renders it a ‘convenient’ but telling indicator of DV severity. The long history of abuse and the ripple effect of such an irreversible loss on significant others among family and friends is not to be discounted. “[Femicide] is often the ultimate outcome of a failed societal and health and criminal justice service response to [IPV]” (Stöckl, et al., 2013, p. 864).

In a systematic review of nonfatal gun use associated with IPV, Sorensen & Schut (2016) advocate expanding an ‘implicit focus on homicide’ to include an intimate partner's nonfatal use of a gun. This recommendation was on the basis few reports documented non-fatal gun use in IPV and yet women’s exposure to it was substantial. In the USA, approximately 4.5 million women have had an intimate partner threaten them with a gun and nearly 1 million have been shot or shot at by an intimate partner (Sorensen & Schut, 2016). Displaying or threatening with a gun creates a ‘coercive control’ context, which facilitates long-term abuse. Intimate partner murder (and suicide) is predominantly perpetrated with a (legal) firearm (Graduate Institute of International and Development Studies, 2013; Abrahams, et al., 2013) and, a country’s homicide rate is strongly associated with firearm availability. Therefore, EC providers, who frequent nonfatal gunshot cases have both a forensic and EC role to play.

2.5.2 Screening or Clinical Case Finding in EC

Screening for IPV, is a position that currently conflicts with the guidance from the UK National Institute for Health and Care Excellence (NICE) (NICE, 2014a) and WHO (Feder, Wathen, & MacMillan, 2013). Although the WHO guidelines (World Health Organisation, 2013b, p. 3) state: ‘Universal screening’ or ‘routine enquiry’ (i.e. asking women in all health-care encounters) should not be implemented; the quality of evidence for this recommendation was graded ‘low to moderate’ and its implementation was considered ‘conditional’. Recommendation 6 of the NICE multiagency working guideline: ‘Ensure trained staff ask people about domestic violence and abuse’ (NICE, 2014b, p. 13), advises as follows without any direct claim to screening in EMS:

> Ensure trained staff in antenatal, postnatal, reproductive care, sexual health, alcohol or drug misuse, mental health, children's and vulnerable adults' services ask service users whether they have experienced domestic violence and abuse. This should be a routine part of good clinical practice, even where there are no indicators of such violence and abuse. (NICE, 2014b, p. 13)

The evidence from some systematic reviews no longer support the implementation of routine screening for IPV (Feder, et al., 2009; O'Doherty, et al., 2015).

> Although identification of affected women patients increases, the absolute number of women identified is modest in comparison with the numbers of women screened and the likely prevalence of [IPV], so a screening programme might provide false reassurance to healthcare providers and policymakers. Moreover, from the small number of screening trials that measured health outcomes for women, there is insufficient evidence of benefit derived to the women screened (O'Doherty, et al., 2015, p. 5).

However, whilst rejecting any benefit to the health system authors still concluded that: "It may be inappropriate to judge a policy of routine enquiry about partner violence by the [National Screening Committee] criteria, particularly as women perceive other valid purposes of screening besides identification" (Feder, et al., 2009). Another systematic review of primary care-based interventions for patients experiencing interpersonal violence [IPV] found: "The majority of studies demonstrated a patient-level benefit subsequent to primary care IPV interventions, with IPV/community referrals the most common positively affected outcome" (Bair-Merritt, et al., 2014). This review supported official US recommendations that routine IPV screening of women of childbearing age during preventive healthcare visits be strongly encouraged (Institute of Medicine, 2011; Moyer, 2013; USDHHS, 2013). Whilst most of the 17 included studies were US studies, this review included 1 South African study (Joyner & Mash, 2011).

> Interventions tended to be brief, delivered by non-physicians, and focused on empowerment, empathetic listening, discussion of the cycle of violence and safety, and referral to community-based resources. Thirteen studies demonstrated at least one intervention-related benefit. Six of 11 articles measuring IPV persistence found reductions in future violence; two of five measuring safety-promoting behaviors found increases; and six of ten measuring IPV/community resource referrals found enhanced use. Some studies also documented health improvements (Bair-Merritt, et al., 2014, p. 188).

In addition, the purpose of a 2012 systematic review of new evidence on the effectiveness of screening and interventions for women in health care settings in reducing IPV and related health outcomes, the diagnostic accuracy of screening instruments, and adverse effects of screening and interventions concluded that: "Screening instruments accurately identify women experiencing IPV. Screening women for IPV can provide benefits that vary by population, while potential adverse effects have minimal effect on most women." (Nelson, Bougatsos, & Blazina, 2012).

Conflicting findings in the systematic reviews mentioned above resonate with a previous PLoS Medicine debate: Should Health Professionals Screen All Women for Domestic Violence? (Taket, Wathen, & MacMillan, 2004). The first author, Taket, argued that it is worthwhile to routinely ask about DV on the basis of routine enquiry, not epidemiological screening, as DV is not a disease but a risk factor for ill health. Practitioner knowledge of abuse enables responsiveness and information sharing that may serve to reduce a victim's sense of isolation and stigmatisation. These points are not in dispute. Given the high DV prevalence, should it not be a personal issue, women may relate the conversation about it to family or friends who do experience DV. Most women do not perceive routine asking to be harmful and value direct asking. Taket individually also identifies the need for practitioner training and criticises systematic reviews for excluding interventions by community based organisations. The other two authors, Wathen and MacMillan, on the other hand, were of the view that the decision to screen must be based on evidence and that whilst there are many screening tools that show an increase in detection, there is insufficient evidence of violence reduction or improvement in quality of life. They have some sympathy for Taket's views but argue that practitioner enquiry about abuse ignores the women's psychological readiness and capacity to act or the risk of reprisal violence. Their stance is based on insufficient evidence for effectiveness beneficence and non-maleficence. "Universal screening for domestic violence should not be implemented unless we are sure that interventions are available to help those identified via screening and that screening plus appropriate treatment will do more good than harm." (Taket, Wathen, & MacMillan, 2004, p. 4). Wathen and MacMillan therefore choose clinical case finding over routine screening, evidence-based approaches and practitioner responsiveness upon disclosure. More recently, "Healthy Debate", a Canadian endeavour to promote patient health rights through access to scientific information, argued that longer term studies were needed to be certain of screening efficacy and that to help break the silence, health workers *should* ask about DV (Stachera, Taylor, & Konkin, 2016).

In a systematic review of IPV screening tools the most studied tools were the Hurt, Insult, Threaten, and Scream (HITS) the Woman Abuse Screening Tool (WAST) the Partner Violence Screen (PVS), and the Abuse Assessment Screen (AAS) (Rabin, Jennings, Campbell, & Bair-Merritt, 2009). Interestingly, no single IPV screening tool had well-established psychometric properties such as internal reliability, test–retest reliability, concurrent validity; discriminant validity; and predictive validity. Even the most common

tools (such as HITS) were evaluated in only a small number of studies. Sensitivities and specificities varied widely within and between screening tools. The study concluded that further testing and validation was critically needed. None of these tools were designed specifically for the out-of-hospital setting.

A randomized clinical trial (Klevens, et al., 2012) allocated women seeking care in 10 outpatient clinics in Illinois (USA) to 1 of 3 study groups: computerized partner violence screening and provision of a local resource list (n = 909), universal provision of a partner violence resource list without screening (n = 893), or a no screen/no resource list control group (n = 898). No differences were found in women's quality of life, days lost from work or housework, use of health care and partner violence services, or the recurrence of partner violence after 1 year. (Klevens, et al., 2012; Klevens, Sadowski, Kee, Garcia, & Lokey, 2015). These findings are consistent with a previous randomised controlled trial in primary health care settings (11 emergency departments, 12 family practices, and 3 obstetrics/gynaecology clinics in Ontario, Canada,) (MacMillan, et al., 2009). However, there was a high participant loss to follow up in the Canadian study, with follow up periods almost half that of the Illinois study (Klevens, et al., 2012). Notwithstanding the cautious interpretation, results of this trial did not provide sufficient evidence to support IPV screening in health care settings.

Findings from an Australian cluster randomised controlled trial found that brief counselling for women disclosing IPV in primary care settings, does not improve quality of life, but can reduce depressive symptoms (Hegarty, et al., 2013). The study did not support the use of postal screening[28] in their identification due to a low response rate (29%). Notwithstanding, the authors suggest that "family doctors should be trained to ask about the safety of women and children, and to provide supportive counselling for women experiencing abuse" (Hegarty, et al., 2013). Paediatricians: Cruz, Randell, Bair-Merritt, & Dowd (2013) in a correspondence about the Hegarty, et al. (2013) study advocate for the need to identify and intervene on behalf of the IPV exposed children. Their concern was the inference by Hegarty et al. (2013) that universal IPV screening is ineffective. The paediatricians opined that it would be premature to conclude that universal IPV screening in health-care settings

[28] Postal screening refers to the recruitment and retention of participants in screening intervention studies using mail-out invitations.

should be discontinued without addressing the long-term effect of these interventions on paediatric outcomes (Cruz, Randell, Bair-Merritt, & Dowd, 2013). This opinion was on the basis that 40% of women experiencing IPV live with children who are subsequently exposed to chronic and unpredictable violence in the home (Cruz et al., 2013). Further, IPV-exposed children are at an increased risk for adverse physical and mental health outcomes, child maltreatment, and academic failure (Shonkoff & Garner, 2012). In an earlier systematic review of those factors that are associated with an increased risk of recurrent child maltreatment, "the most important predictors of recurrent maltreatment [were]: number of previous episodes of maltreatment; neglect (as opposed to other forms of maltreatment); parental conflict; and parental mental health problems" (Hindley, Ramchandani, & Jones, 2006, p. 752).

The concern from the paediatric perspective above is also fuelled by the expert comment (Jewkes, 2013) that large trials (Klevens, et al., 2012; Hegarty, et al., 2013; MacMillan, et al., 2009) although differing in design, resoundingly agreed "that activities to identify asymptomatic abused women and offer different types of intervention do not improve women's health" (Jewkes R. , 2013, p. 190). However, these large trials (in Canada, USA and Australia):

> …do not show a lack of value in asking female patients about IPV in circumstances in which it might be directly associated with the presenting complaint or important for counselling or advice given. Indeed, IPV is a crucial causal factor underlying women's presenting problems in many parts of the health services, particularly mental health problems. Opening a discussion of problems in intimate relationships, including violence, is necessary to provide information for clinical care, and women might be more ready to address change in their lives that will result in the ending of IPV and abusive relationships when they recognise that they have related health problems (Jewkes, 2013, p. 190).

Jewkes (2013) comments that these sorts of interventions are attractive because they are simple, generally cost little, and highly feasible since identification of abused women, among general health-service users, are done through asking a simple question, or set of questions. Still, appropriate advice and interventions need to be provided. In reply to Cruz et al. (2013) the authors of the Australian study "…highlight that we did not conclude from our data that universal screening followed by brief intervention is ineffective" (Hegarty & Morris, 2013, p. 1326), implying that the paediatricians concerns were unfounded.

A recent Cochrane systematic review was conducted to assess the effectiveness of screening for IPV conducted within healthcare settings on identification, referral, re-

exposure to violence, and health outcomes for women, and to determine if screening causes any harm (O'Doherty, et al., 2015). The review initially included 13 trials that recruited 14,959 women from diverse healthcare settings (antenatal clinics, women's health clinics, emergency departments, primary care). After exclusions, the remaining eight studies (n = 10,074), screening increased clinical identification of victims/survivors (OR 2.95, 95% CI 1.79 to 4.87, moderate quality evidence). Subgroup analyses suggested increases in identification in antenatal care, maternal health services and emergency departments (all of moderate quality evidence). Overall, rates were low relative to best estimates of prevalence of IPV in women seeking healthcare. Thus while screening increases identification, there is insufficient evidence to justify screening in healthcare settings. Furthermore, the study found that there remains a need for studies comparing universal screening to case-finding (with or without advocacy or therapeutic interventions) for women's long-term wellbeing in order to inform IPV identification policies in healthcare settings (O'Doherty, et al., 2015).

Faced with the dilemma that primary health care (PHC) interventions have been shown to be ineffective (Hegarty, et al., 2013; Jewkes, 2013), “it is timely to consider the possibility that there is a serious mismatch between the types of interventions being tested and the complexity of the problem of [IPV]” (Rees & Silove, 2014, p. 229). Rees and Silove (2014) argue that the background of multiple forms of adversity is likely to account for IPV affected women’s poor overall response to short-term, PHC interventions as women with multiple forms of adversity might constitute up to half of the population affected by IPV (Rees, et al., 2011). Violent, controlling men will discourage women from seeking help or from disclosing their symptoms and injuries to professionals—recognised by Jewkes as one of the important reasons to screen all women attending primary health-care services, and not just those with obvious or disclosed harms (Jewkes, 2013). Another rationale for failed PHC interventions is that amongst the multiple adversities is childhood sexual abuse (Rees, et al., 2011) that erodes self-esteem and confidence into adulthood. Mental disorders arising from the IPV exposure (including depression and post-traumatic stress disorder) can impair women’s capacity to take assertive action (Rees, et al., 2011; Trevillion, Oram, Feder, & Howard, 2012). Further, effective change requires economic and social support and a trust in the legal and law enforcement mechanisms, all of which are lacking for women in chronically abusive relationships (Rees & Silove, 2014). An unavoidable selection bias of women with multiple forms of adversity, due to their high service use, might lead to their

over-representation in the primary care trials of short-term interventions that have been found not to work. Rees and Silove (2014) propose that:

> …community-based [IPV] services apply a multimodal, integrated, longer-term approach that includes protection, refuge, social and mental health interventions, counselling aimed at empowering women, and legal advice—a package of support that appears to better match the needs of these women. Personnel working in these programmes have a long-term perspective, understanding the systemic nature of the problem, and anticipating that change might occur incrementally. Yet there is a dearth of contemporary, rigorous evaluation of the outcomes of multimodal community programmes (Rees & Silove, 2014, p. 229).

Notwithstanding their evaluation, it is unknown how many of such *multi-modal community programmes* exist.

2.6 International Legislative and Policy Context for EC Responses to DV

The direct and indirect legislative and policy mandates empowering EC providers and enabling responses toward DV are critical considerations.

The Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) was adopted by the United Nations (UN) General Assembly in 1979 and is described as a bill or rights for women (United Nations, 2017a). The definition of discrimination includes GBV: violence that is directed against a woman because she is a woman or that affects women disproportionately. It includes acts that inflict physical, mental or sexual harm or suffering, threats of such acts, coercion and other deprivations of liberty. The Beijing Declaration and Platform for Action defines GBV in line with CEDAW (United Nations , 1995). It asserts that GBV is a manifestation of historically unequal power relations between men and women[29], which have led to domination over and discrimination against women by men and to the prevention of women's full advancement. Whist the Millennium Declaration and Development Goals did not directly address GBV, its successor, the 2030 Agenda for Sustainable Development (United Nations, 2017b) does. Sustainable Development Goal 5: "Achieve gender equality and empower all women and girls" requires member states to:

- End all forms of discrimination against women and girls everywhere.
- Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation.

[29] This power imbalance enhances the paradigmatic choice of critical theory.

- Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation.

The World Health Assembly (WHA) Resolution 60.22 (WHA, 2007) in considering the report on Health systems: Emergency-care systems (WHO, 2007), recalled resolution WHA 56.24 on implementing the recommendations of the World report on violence and health, which noted "that violence was a leading worldwide public health problem" (WHA, 2007, p. 1). WHA 60.22 calls on the WHO, ministries of health and civil society to advocate for and strengthen EC systems to respond to the burden of trauma and emergencies (that interpersonal violence, among other burdens, invariably perpetuates).

In recognition that children are a vulnerable group The United Nations (UN) compels signatory states in Article 19 of the Convention on the Rights of the Child (United Nations Children's Emergency Fund, 1989) to 'take all appropriate social and educational measures to protect the child from all forms of physical or mental violence, injury, neglect or negligent treatment, maltreatment or exploitation including sexual abuse'. Article 19(2) of the Convention clearly states that measures used to protect children need to be protective and preventive and should encompass the identification, reporting, referral, investigation and treatment of child abuse. The African Union also has a Charter on the protection of children (Hendricks, 2014).

2.7 South African Legislative and Policy Context for EC Responses to DV

2.7.1 The Health Professions Act 56 of 1974

'Regulations Defining the Scope of the Profession of Emergency Care' '("*the Scope Regulations*") provide that the following acts of EC personnel shall, for the purposes of the Health Professions Act (Health Professions Act , Act 56 of 1974), be deemed to be acts that pertain especially to the profession of EC (Regulation 2):

> The identification of the emergency care needs of a person in an emergency care situation; the evaluation of the emergency care needs of a person in an emergency care situation with due regard to his or her safety and the implementation of precautions to ensure his or her safety; the rescue of a person from an [EC] situation or from a potential [EC] situation; the provision of emergency care to a person in an emergency care situation; and the prevention of further injury to, and the combating of possible complications of an illness or injury, a person in an emergency care situation (Health Professions Act , Act 56 of 1974).

Regulation 1 defines "*emergency care situation*" to mean circumstances during which a person is injured or is for some other reason in mortal danger and in need of EC. On the other hand, "*emergency care*" means the rescue, evaluation, treatment and care of an ill or injured person in an EC situation and the continuation of treatment and care during the transportation of such person to or between health establishment/s (Health Professions Act , Act 56 of 1974). The mortality and morbidity outcomes associated with GBV align with the definition of EC situation. Ethical Rule 27A of the Health Professions Act (Health Professions Act , Act 56 of 1974) requires that a practitioner shall at all-time act in the best interests of his or her patient and shall respect patient confidentiality, privacy, choices and dignity. Failure to do so would constitute unprofessional conduct. The test of the reasonable EC provider would be used to determine the threshold for ethical breach. There-in lays the challenge: What is the conduct of the reasonable EC provider with regard to the DV case?

2.7.2 The Domestic Violence Act 116 of 1998

The Constitution of RSA (Act 108 of 1996) is intended to be transformative in nature. The promotion of gender equality and empowerment of women is central to the human rights agenda. The equality clause, section 9, calls for the right to equal protection and benefit of the law and expressly forbids gender-based discrimination. Section 12 provides for the freedom and security of the person, including freedom from violence.

Because women continue to experience GBV, the principal object of the Domestic Violence Act (Domestic Violence Act, Act 116 of 1998) is to provide for the issuing of protection orders with regard to DV. Section 2 requires members of the SAPS to render such assistance to a complainant of DV as required at the scene of an incident of DV or as soon thereafter as is reasonably possible or when the incident of DV is reported. In addition such a complainant must be provided with the information necessary to make informed choices regarding the remedies at his or her disposal in terms of the Act. In terms of section 4(3) of the Domestic Violence Act (Domestic Violence Act, Act 116 of 1998) an application for a protection order may be brought on behalf of a complainant by any other person, including a health service provider, who has a material interest in the wellbeing of the complainant with the written consent of the complainant, except in circumstances where the complainant is a minor, mentally retarded, unconscious, or a person whom the court is satisfied is

unable to provide the required consent. Under the Act, a perpetrator may be arrested without a warrant, although the issuing of a protection order is accompanied with a suspended warrant of arrest, and dangerous weapons may be seized by the police. If the health care provider is unaware of such rights and obligations, the opportunity to act early on the victim's behalf is lost.

2.7.3 Mandatory Reporting of Child Abuse

The rights of all South Africans are entrenched in The South African Constitution (Act 108 of 1996) but it is Section 28(1)(d) that explicitly holds that 'every child has the right to be protected from maltreatment, neglect, abuse and/or degradation'. The Children's Act (38 of 2005) and its amendment (Children's Amendment Act, Act 41 of 2007) address children's rights in its entirety (Hendricks, 2014).

Hendricks (2014) highlights the need for mandatory reporting of abuse of children with the UK case of Hamzah Khan (aged 4 years), who died in 2009 from starvation, but whose body was only discovered in 2011 (Thornton, 2013). "Questions were raised about the silence of officials, including teachers, social workers and policemen, who were involved with Hamzah at some point but did not intervene on his behalf" (Hendricks, 2014). Hendricks (2014) estimates that almost 38% of the SA population are legally defined as children (from a 2013 mid-year estimate of 52.98 million). For the period 2012-2013, 495 540 cases of crimes against children were reported (South African Police Service, 2013), a statistic estimated to be at least nine times lower than the actual number (Seedat, Van Niekerk, Jewkes, Suffla, & Ratele, 2009). Research into rape in SA revealed that the perpetrator is known to the child in 84% of all sexual crimes committed against children. (Seedat, Van Niekerk, Jewkes, Suffla, & Ratele, 2009). What with the social worker/RSA population ratio of 1:3,187 and a police/RSA population ratio 1:336, Hendricks deduced that children will not be adequately assisted.

Moreover, despite sexual abuse and maltreatment of children being preventable, the lack of data may have hindered the development of systems to support and protect children, until now. The first national prevalence study of child maltreatment in RSA (Artz, et al., 2016) found that 784,967 young people in RSA are likely to have been the victims of sexual abuse

by age of 17. Of these, 351,214 cases of sexual abuse would have occurred in 2015 alone. Only 31% of girls and *no* boys reported sexual abuse to the police. This provides further justification for the notion of EC providers and other social actors to act as sentinels for child abuse surveillance. Galvanising all role-players mentioned in section 110 (Children's Amendment Act, Act 41 of 2007) to be vigilant and report abuse is crucial to the safety of children experiencing abuse.

Mandatory reporting laws generally pertain to all individuals to whom specific health care professionals provide treatment or medical care, or those who attend the health care facility. In the USA these laws fall into four general categories (Futures without Violence, 2011): (i) States that require reporting of injuries caused by weapons; (ii) States that mandate reporting for injuries caused in violation of criminal laws, as a result of violence, or through non-accidental means; (iii) States that specifically address reporting in domestic violence cases; and (iv) States that have no general mandatory reporting laws. Enhancing patient safety and increasing access to health care services is of paramount importance but is challenging even where mandatory reporting procedures are in place.

> For some victims of domestic violence calling the police invokes retribution by their batterers. Criminal justice intervention is not always the best or safest response for victims who may fear that law enforcement reports made by medical personnel will place them in greater danger. Consequently, domestic violence victims may have no choice but to withhold information from their health care providers regarding the origin of their injuries or other health problems, or avoid seeking medical attention entirely (Futures without Violence, 2011, p. 2).

In RSA, Section 110 of the Children's Amendment Act (Children's Amendment Act, Act 41 of 2007) refers to the children's right to protection afforded by section 28 of the Constitution (Act 108 of 1996). Subsection (1) names various professional categories who are legally obligated to report any reasonable suspicion of child abuse. EC providers, despite being the largest constituency in the HPCSA, are conspicuous by their absence from subsection (1)[30]:

> Any correctional official, dentist, homeopath; labour inspector, legal practitioner, medical practitioner, midwife, minister of religion, nurse, occupational therapist, police official, physiotherapist, psychologist, religious leader, social service professional, social worker, speech therapist, teacher, traditional health practitioner,

[30] The very specific nature of this list lends credence to the omission of EC: Any correctional official, dentist, homeopath; labour inspector, legal practitioner, medical practitioner, midwife, minister of religion, nurse, occupational therapist, police official, physiotherapist, psychologist, religious leader, social service professional, social worker, speech therapist, teacher, traditional health practitioner, traditional leader or member of staff or volunteer worker…

> traditional leader or member of staff or volunteer worker at a partial care facility, shelter, drop-in centre or child and youth care centre who on reasonable grounds concludes that a child has been abused in a manner causing physical injury, sexually abused or deliberately neglected, if it is in the best interest of the child concerned, must report that conclusion to a designated child protection organisation or the provincial department of social development (Children's Amendment Act, Act 41 of 2007).

In terms of subsection (1) above it would appear that there is no direct obligation for EC providers, specifically, to report abuse. As it would be against the spirit of the law to unduly disempower any tier of health care professional or to undermine the child's right to protection, subsection (2) below is interpreted to be inclusive of EC providers, although the duty to report abuse is seemingly discretionary:

> Any person who on reasonable grounds believes that a child is in need of care and protection because of abuse, sexual abuse or deliberate neglect, may report that belief to the provincial department of social development, a designated child protection organisation or a police official (Children's Amendment Act, Act 41 of 2007).

In addition, section 54 of the Sexual Offences and Related Matters Act (Act 32 of 2007) compels '[a] person' who knows or who has a 'reasonable belief or suspicion' of any form of sexual abuse against a child or mentally challenged individual to report it to a police official. Considering that EC providers may encounter cases of abuse (besides sexual offences), it seems reasonable to call for an amendment for the EC profession to be included in subsection (1) of section 110 (Children's Amendment Act, Act 41 of 2007). This can be achieved by an inclusive definition of 'medical practitioner', addition of 'health practitioner' or more specifically, 'emergency care provider/practitioner'. The reliance on the term "medical practitioners" to be inclusive of EC providers does not hold, as in the ordinary sense, and in the absence of definition by the Children's Act, it refers to medical doctors. When related legislation is considered, the Health Professions Act (Republic of South Africa, Act 56 of 1974) is persuasive (but not deterministic) that the term "medical practitioners" refers to those registered with the medical and dental board of the HPCSA as such, and that the term "health practitioner" is the term inclusive of all categories of professionals registerable with the HPCSA. Other legislation, such as for the medical practitioner role in blood alcohol sampling and testing (Criminal Procedure Act, Act 51 of 1977), or occupational health references (Naidoo, Zalgoanker, & Christopher, 2013) *do not* suppose the inclusion of 'paramedics' when reference is had to 'medical practitioners'.

There is no known case law that addresses this (semantic) lacuna. It is therefore important to enhance the accountability for reporting by EC providers and to promote responsivity of the EMS system in the interest of child protection.

EC providers may have a perspective of neglect or abuse from attending the abusive home that other health care workers do not. If the reporting is done in good faith, both Act 41 of 2007 and Act 32 of 2007, protects 'he who alleges' from criminal and civil proceedings. "The 'good faith' standard is measured objectively against standards of decency and fairness set by the community [represented here by EC professionals and the HPCSA] and not against the individual's subjective beliefs of impartiality" (Hendricks, 2014, p. 551). Ironically, health worker refusal to detect and report abuse, or denial of responsibility to report, is *de facto* 'protective' of the abuser.

Increasing efforts to prevent child abuse and protect the children of SA may necessitate multiple and diverse interventions. A good starting point would be to enhance existing attempts to ensure the safety of children. To this end, it is recommended that routine and selective screening and mandatory reporting for child abuse is implemented by EC providers and that this is studied by EC researchers so that barriers to screening and reporting can be more specifically addressed.

Professionals such as EC providers should advocate for children's rights and promote their obligation, moral if not legal, to report abuse of any nature. Public health officials, educators and all persons working with children must be trained to identify abused children and those at risk of abuse. The EC provider must have contact information regarding social workers who specifically deal with child abuse and are trained in the correct reporting procedure. To this end a clinical practice guideline on the EC provider's obligation to report abuse against children is warranted.

2.8 DV Prevention Implications for EC Providers

A 2001-2010 review (WHO Regional Committee, 2011) of the implementation of the Health Promotion Strategy for the African Region identified that there was "limited involvement of players such as community-based groups, civil society, academia and development partners in advocacy actions and regulation and legislation for good health governance"

(WHO Regional Office for Africa, 2013, p. 7). It also noted “a paucity of human resources to carry out health promotion activities at community level and a lack of sustainable financing mechanisms for health promotion” (WHO Regional Office for Africa, 2013, p. 7).

Prehospital care providers are potentially the first point of contact for victims of DV that are common health care encounters (IOL News, 2011). This places this group of health care practitioners in a unique position to identify these victims in the acute and non-acute setting soonest (Naidoo, Knight, & Martin, 2013b), and at no additional capital or operational cost (except for training costs). Early recognition and early intervention is seen as one of the most effective methods of DV prevention. There is an ethical obligation to implement a comprehensive health approach to manage DV victims. DV needs to be recognised as a health priority by all levels of the health sector and the development of policies and guidelines for all levels is essential to comprehensively address DV. This should also include an examination protocol for the management of women who have experienced abuse (Martin & Jacobs, 2003). In response to this need, the HPCSA has approved screening guidelines in EC [Annexure 1; (Vinassa, 2013)].

Thus, early identification and recognition of these victims may play a role in decreasing the burden of DV cases in RSA. Valid screening tools must be adapted to the EC environment to achieve this goal. Mandatory screening for DV by EC providers should be implemented in the prehospital setting. Although recent WHO (2013b) recommendations, [referred to by Joyner (2013) as idealistic] do not support universal screening, it is unlikely to be directed at prehospital providers, who are in a unique position to screen routinely, create awareness of DV prevalence and implement clinical case-finding (Naidoo, Knight, & Martin, 2013b). “It is the everyday conditions that make violence possible and probable. As a social practice, violence is made permissible through normalised, everyday discriminations…These discourses of prejudice…”make material acts of violence imaginable and explicable” (Shefer, 2013, p. 4) to the extent that even ‘extreme’ violence is normalised (Judge, 2013). Not immune, EC providers, in their everyday practice of health care, participate in failed resuscitations and are exposed to extremes of trauma, that may serve to not only normalise its occurrence, but also to undermine their EC response. Despite an EC response to both cases, there was no outcry or any reflective discourse by the EC community for the late

Anene Booysen[31] or Reeva Steenkamp[32] (or any other victim of femicide) – not at the level of EC, forensic practice or violence prevention – presenting yet another lost opportunity.

Limitations of the 'Health Promotion Strategy for the African Region' can be mitigated for DV by enhancing the EC clinical and systems response, on the premise that the almost 70 000 strong South African EC profession are all latent health promoters with a current disproportionate focus on 'tertiary care modalities' and with sustainable alternative funding. The recent pilot of the DV call centre[33] by the Department of Social Development highlights the lack of inter-sectoral collaboration. After-all, EMS has established communications centres in every Province that could facilitate early detection and referral nationally, given an ideological shift. The case for the 'health promotion value proposition' of EC involvement in DV prevention and management in RSA is made (Naidoo, Knight, & Martin, 2013b). The potential for this value proposition that intersects EC and health promotion to extend into the rest of Africa has promise as southern African countries embark on EC implementation strategies (Christopher, et al., 2014).

2.8.1 DV Call taking, EC Dispatch and Surveillance Potential of EMS

The EMS work process begins with the placement of a telephone call by the health-care user or, if unable to do so, by another interested party. This is followed by the EMS

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[31] Anene Booysen was a 17-year-old who was raped, brutally mutilated and left for dead in Bredasdorp, a rural town in South Africa in 2013. Transported by the EMS, she later died from her injuries in a Cape Town Hospital (Mafu, 2014).

[32] Reeva Steenkamp was the girlfriend of athlete Oscar Pretorius who had shot several times through a closed door and killed her, claiming he thought there was a burglar. Her death met the broad definition for femicide which refers to any killings of women or girls (WHO, 2012). Although the prosecution could not prove intention to kill Reeva Steenkamp, Pretorius initially received a 5-year term for culpable homicide, and was eligible for parole after 10 months. The Supreme Court of Appeal later overturned this conviction to one of murder. The case has similar claims against police evidence from the unsolved murder case of Inge Lotz in 2005 (Altbeker, 2012).

[33] "In trying to address the scourge of GBV, the Department of Social Development, in partnership with the Vodacom Foundation, is piloting a 24-hour call centre dedicated to provide support and counselling to victims of GBV. The toll free number to call is 0800 428 428 (0800 GBV GBV) to speak to a social worker for assistance and counselling." (Department of Social Development, 2014). This was a direct result of the killing of Steenkamp, as well as WHO and SAPS statistics on DV incidence.

communications centre processing the call and despatching what it deems to be an appropriate response, based on specific need and resources available relative to general demand at that time. The communications centre's function is to initiate, monitor and control the response to all calls and documented the impact on response. Effective EMS system communications should provide for "system control and administration, scene control and coordination and medical direction" (Walz, Krumperman, & Zigmont, 2011, p. 136). DV cases, therefore, should be managed by means of protocols and captured as a data set for quality monitoring purposes or sentinel surveillance. The most advanced EMS communications system in RSA, currently implemented in the WC EMS, was not DV sensitive (Booley, 2016). In the USA, the EMS and DV health user interaction remains unexamined:

> In 2012, the American College of Emergency Physicians (ACEP) reaffirmed that domestic violence is a serious public health hazard that emergency medical services (EMS) personnel will encounter. Many victims of domestic violence may refuse transport to the hospital, making EMS prehospital field personnel – EMTs and paramedics – their only contact with healthcare providers. Despite these facts, the interaction of field EMS personnel and victims of domestic violence remains largely unexamined (Donelly, Oehme, & Melvin, 2016, p. 1).

The survey in a large southern US state found that in calling 911, victims of DV may have contact with EMS personnel; that attitudes and experiences of EMS personnel may influence that interaction and that EMS personnel endorse many problematic beliefs about DV (Donelly, Oehme, & Melvin, 2016). The communications centre is the data collection hub. Although based on low quality evidence, most studies in a critical review (Taylor, Boyle, Sutherland, & Giacomantonio, 2016) demonstrated that ambulance services detected a substantial proportion of assaults that were not reported to and recorded by the police or the emergency departments. Ambulance data provide a unique source of information about the epidemiology of community violence and have the potential to improve current violent crime surveillance methods with a view to reduce community violence. In a UK study only 9% of all the ambulance calls corresponded with similar police records however a 'hotspots' approach improved efficiency of resource deployment (Ariel, Weinborn, & Boyle, 2015) which suggests some promise for EMS surveillance utility.

2.8.2 Selective Screening versus Universal Screening for DV in EC

The communication's response is defined by the determination of the nature of the call (Walz, Krumperman, & Zigmont, 2011). If this is not specific and consistent, cases of DV may go unrecognised. Upon arrival at a DV scene, a medical triage is performed and a biomedical response ensues. Neither selective, nor universal screening for DV in the prehospital field occurs in RSA (Naidoo R. , 2016). Selective screening is indicated where there is a high index of suspicion for DV and is partial to DV incidence. Universal screening, on the other hand removes the potentially dangerous reliance on suspicion and suggests that due to high DV prevalence, even where the presenting chief complaint is not DV, the complaint may be DV related and deserves inquiry and appropriate referral (Jewkes R. , 2013).

Studies conducted in the Western Cape find that recognition of women experiencing interpersonal violence (IPV) is very low in primary care (less than 10%) and argue for selective case finding (Joyner & Mash, 2012a; Joyner & Mash, 2012 b). Although not directly in the emergency medical care context, it can be argued that primary care facilities are de facto 'prehospital' and constitute both a point of arrival for patient 'pick-up' and a destination (for patient 'drop-off') for the emergency medical services. The lack of support for universal screening (WHO, 2013) does not appear to be in direct relation to prehospital EC as EMS involvement is absent in the WHO guideline. Notwithstanding that EMS is not a universal feature of all health systems (particularly in Africa); universal screening usually implies the mass screening of the whole population.

The EC patient cohort is already at a higher probability of experiencing DV than the general population as the health consequences of DV manifest (Sprague, et al., 2013). Screening all women that present to EMS is therefore both 'selective' and 'universal' for EMS (Naidoo, Knight, & Martin, 2013c). Patients are frequently 'discharged' in the prehospital setting due to the EC system of sorting and prioritising patients (triage). If DV is not screened and referred responsibly it has the potential to deliberately (and negligently) leave victims of abuse in their abusive homes oblivious to their level of risk and unaware of help-seeking opportunities by the health department. In the context of EC, the screening guidelines by Martin and Jacobs (2003) have forensic appeal whereas Joyner's Intimate Partner Violence Model (Joyner & Mash, 2012a) has a primary health care appeal. The forensic focus of the former aligns well with the EC provider forensic role, and EC is likely to overlap with

Joyner's tier 1 of the 3 tier model. EC providers, like hospital trauma unit staff, may encounter survivors of DV in the "open window" (Joyner, et al., 2007) immediately after an acute DV incident. To not routinely enquire about abuse, whether or not DV is the presenting complaint, constitutes a lost opportunity for early detection. The re-contextualisation of DV for EMS (Naidoo, Knight, & Martin, 2013c) has led to the HPCSA endorsing the forensic EC role and ultimately the universal screening recommendations presented in the Martin and Jacobs guideline (Vinassa, 2013).

2.8.3 EMS Responses to DV: What is the practice gap?

Most of the prevalence data documented during health care encounters have been with doctors or nurses, and primarily in the developed nations, in particular, USA, Canada, UK and Australia. It is also accepted that nurses can play an important role in identifying victims who present to healthcare settings with DV related health issues (Barefoot & Galvan, 2013; Ali, McGarry, & Dhingra, 2016; Joyner & Mash, 2012 b). "To identify and respond to victims effectively [given the low detection rate by health professionals] emergency nurses must understand domestic abuse and its associated complexities" (Ali, McGarry, & Dhingra, 2016, p. 25). Notwithstanding the emergency department sites, none of the systematic reviews included data by EC professionals in the EMS context (i.e. prehospital milieu).

Saywer, Coles, Williams, & Williams (2015) acknowledged that although the Australian government is committed to action to prevent DV, strategies require input and collaboration from all agencies engaging patients, *including* ambulance services. They report that…"to date no Australian ambulance service has published comprehensive guidelines or strategies to improve health outcomes for IPV patients in line with national strategies" (Saywer, Coles, Williams, & Williams, 2015, p. 307). Their analysis of the Australian national plan for DV reduction revealed key actions that Australian ambulance services could undertake immediately for the benefit of IPV patients: 1) collaboration with external agencies, 2) education, 3) data collection and 4) championing values promoting zero tolerance of violence towards women.

> Australian ambulance services are currently underserving [IPV] patients and must undertake immediate action. Successful strategies to address knowledge and policy gaps will require significant input and guidance from key organisations, including advocacy groups, police and EDs [emergency departments] (Saywer, Coles, Williams, & Williams, 2015, p. 307).

The authors suggest EDs would most likely need to take the lead in creating comprehensive policies and guidelines from which ambulance services can derive their own policies. Wherever the leadership comes from, it seems the EC profession and EMS organisations will have to take responsibility for its own response to the DV burden. Of course continuity of care is a principle to uphold, but some patients will refuse transportation. Sawyer et al. (2015) concludes that ambulance services are currently underserving IPV patients and must undertake immediate action. “Failure to address this practice gap might result in paramedics becoming a barrier for intimate partner patients to receive appropriate care and support” (Saywer, Coles, Williams, & Williams, 2015). ‘Paramedics as barriers’ was the implication of an early systematic review and meta-analysis to determine if US paramedics could establish medical necessity for the purpose of accurately and safely identifying patients who do not require ambulance transport. The study found that paramedics could not determine medical necessity (Silvestri, et al., 2002). This lends credence to the claims of historical underservicing (Saywer et al., 2015) or over-servicing patients. In the interest of economic sustainability of EMS, determination of medical necessity, prehospital discharge, treat and release and dispatcher screening are amongst the strategies to reduce EMS burden and manage resources. In the USA, policies are now in place to improve diagnostics, triage and determinations of need (Millin, Brown, & Schwartz, 2011). Determination of necessity is likely to be related to significant gaps in knowledge about what is known about violent injury requiring critical care, including child physical abuse, homicide, youth violence, IPV, self-directed injury, firearm-related injury, and elder physical abuse (Riley, et al., 2015)…

> …and must be addressed by meaningful, sustained tracking and study of the epidemiology, clinical care, outcomes, and costs of critical violent injury. Research must aim for not only information but also action, including effective interventions to prevent and mitigate the consequences of critical violent injury (Riley, et al., 2015, p. 2460).

A survey in Durban, RSA revealed that most of the forensic tasks to be performed by the ED nurses were rated as ‘never’ or ‘seldom done’ due to a lack of training and knowledge in the field of forensic nursing (Abdool & Brysiewicz, 2009). This is of concern because if prehospital EC providers do not have a well-defined forensic role; and if ED nurses do not perform forensic duties effectively, then no custodian of the medico-legal mandate exists. A more recent descriptive study amongst nurses, emergency medicine technicians, and

ambulance and EC technicians in Turkey found that in 112 emergency stations, encounters with forensic cases (including sexual assault, murder and shootings) was frequent and personnel with higher educational levels and nurses had more successful practices in forensic cases (Asci, Hazar, & Sercan, 2015). Still, health personnel had approaches that may negatively affect the solution of forensic cases, in terms of maintaining the chain of evidence.

2.9 Conclusion

The literature review sought to intersect the knowledge related to EC, DV and forensic medicine practices. Through a critical theory lens, the literature above briefly considered DV conceptions that serve as theoretical explanations for GBV. There is no direct EC theory that emerged in the review, suggesting a theoretical lacuna. Prevalence studies in a multitude of settings concur that the burden of DV and IPV amongst adult women and children is a significant public health problem. That interpersonal violence is a crime with negative health consequences that include femicide, renders it an important forensic medicine concern. That EC providers encounter such cases provides the opportunity for intervention or complicity. Whilst screening interventions are not supported in the evidence, there is unanimous support for routine or selective 'asking' about current or past abuse (as a social determinant of health), responsible referral and collaborative interventions (toward a community of forensic EC practice). Asking is sort of an intervention in itself as it may break the silence, help reframe what a normal relationship is (at the very least), or it may improve access to care (Stachera, Taylor, & Konkin, 2016).

Despite international policy conventions and RSA legislative improvements, DV prevalence and related homicide rates are alarming. In RSA, interpersonal violence is the second-highest contributor to years of life lost and, in women, IPV accounts for 62.4% of this high burden (Norman, et al., 2007).

> Despite this notable burden of disease, standardised protocols for IPV care have not been implemented in the South African primary healthcare services, leading to poor identification and inconsistent management (Rees, Zweigenthal, & Joyner, 2014c)

None of the studies included in any of the systematic reviews reflected on in this chapter included EMS data, not even in developed settings. As the EMS bears witness to these risk factors for DV/IPV it has the potential to document risk and act as sentinel surveillance,

particularly for cases that are discharged at the scene or those that do not receive professional assessment. Increasingly, we are becoming aware of the factors associated with domestic abuse. For example, there is a higher risk of experiencing adult lifetime partner violence among women with depressive disorders, anxiety disorders, and PTSD, compared to women without mental disorders (Trevillion, Oram, Feder, & Howard, 2012). Abused women have more than double the number of medical visits, an 8-fold greater mental healthcare usage, and an increased hospitalization rate compared to non-abused women (Wisner, Glimmer, Saltzman, & Zink, 1999). Such knowledge may enable selective screening. Earlier WHO guidelines (World Health Organisation, 2009, p. 3) suggested that:

> A range of interventions can help identify victims and initiate a response: Screening tools appear promising to identify victims of [IPV] and elder abuse. Violence education programmes can raise awareness of violence and increase knowledge of how to identify and support victims. Mandatory reporting systems, however, although established in many countries, remain controversial. In England and Wales, multi-agency risk assessment systems enable staff in a range of services to identify high risk victims of intimate partner violence and better plan a support strategy.

Although the WHO clinical guidelines in 2013 may surpass the 2009 guideline, neither position (screening or clinical case finding) has been tested in the EMS context.

Whilst the presence of the EMS at a private residence (the scene) creates a *de facto* health setting, none of the studies in Rabin, Jennings, Campbell, & Bair-Merritt (2009) [or any of the systematic reviews mentioned above] reported screening implementation in EMS. EMS may be considered an extension of the primary health care setting as it links the community with primary (and tertiary) health facilities, but whether existing tools and strategies suffice for EMS remains unanswered. Motivated by the 'dangerous proposition' that for IPV, nothing works (Jewkes R. , 2013), the opportunity presented is to explore the role of EMS in IPV responses. This notion is supported:

> The health sector has a responsibility not only to respond to the underlying violence that women seeking health services experience, but also to work together with other stakeholders and communities to try and address the contextual factors that lead to IPV and HIV. This requires the empowerment of healthcare workers, women and communities, as well as adjustments to system-level barriers that impede care. A comprehensive health sector response to IPV has the potential to significantly improve the health of the population (Rees, Zweigenthal, & Joyner, 2014c, p. 7).

EMS is a structure within the health sector, and, according to the evidence, can be utilised to further the health and human rights prerogative of DV prevention. Utilization of a

resource such as the EMS for DV prevention can provide the Department of Health (DOH) with an additional tool for primary prevention and intervention. The paucity of evidence in the prehospital environment is of interest as the abuse is located and perpetrated here. More research is needed in the evolving epidemiology of DV, the health needs of perpetrators *and* victims and the role of prehospital systems in promoting health and preventing the morbidity and mortality associated with DV.

"Emergency medicine is the only discipline with 'universality and 'responsivity' at the point of need. This implies the potential for the simultaneous widespread facilitation of access to health care" (Christopher, et al., 2014, p. 156), and indeed, health promotion. "To ensure that our responses to the brutal and demeaning legacy of sexual and other gender violence are not deployed in reproducing the very brutalities they seek to challenge, we need to unpack and interrogate carefully the things we say and do" (Shefer, 2013). This review supports the aim that EC research is not complicit in reproducing the past-neither in EC policy nor in its practice. This historical realist ontology aligns well to the critical theory frame for this study, the implications of which follow in Chapter 3.

'Time-to-care' is a mainstay measure in acute care settings. A solitary focus on symptomatic treatment in acute and EC settings is problematic in the context of DV, where victims of abuse present with a myriad of chief complaints directly and indirectly related to the experience of chronic abuse both after and between battering or other abusive incidents. Phrased differently, stopping the bleeding does not stop the abuse (Naidoo, Knight, & Martin, 2013b), and the absence of 'bleeding' does not imply the absence of violence nor should it presume EC intervention is not required.

The statement below holds true for the RSA EMS and DV burden:

> Little research has been done in lower- and middle-income countries on the burden of disease reduction attributable to emergency care, whether through injury treatment and prevention, urgent and emergency treatment of acute conditions, or emergency treatment of complications from chronic conditions (Hsia, Razzak, Tsai, & Hirshon, 2010).

Based on the review of the literature, the gap in the knowledge, that is the subject of the study, has not been studied. The Children's Amendment Act (Act 41 of 2007) is deficient in

imposing reporting obligations to EC providers. In terms of the Act, EC workers are akin to ordinary citizens and may exercise discretion in reporting suspicion of child abuse. The self-efficacy of EC providers in DV responses and the efficacy of efforts to strengthen EC policy to offset such deficiency is therefore worthy of scholarly evaluation. Of concern, is the absence of direct theoretical explanations of EC responses to DV burden.

The role and scope of prehospital EC providers to DV intervention as a form of GBV prevention remains, in operational terms, largely unanswered through the narrative analysis above, notwithstanding the many systematic reviews considered. The theoretical and clinical best practice to inform the RSA EC community and policy development may be answered by this study as it considers the responsiveness of EMS to the health needs of DV victims.

Chapter 3 maps the methods by which the reciprocal meaning of DV and EC, and the forensic EC associations in DV responses are explored.

3 CHAPTER THREE: RESEARCH METHODOLOGY

This chapter begins with a description of the research setting and participants in order to set the scene. The research design follows with particular attention to the sampling frame, instrumentation and data collection methods and procedures. Considerations for data analysis, ethics, internal/external validity and limitations conclude the chapter.

3.1 Setting and Participants

The setting is EMS education and health care organisations in RSA in which EC providers function. These are HPCSA-approved Higher Education Institutions (HEI) and Provincial Colleges and EMS operational sites. Traditionally known as ambulance services, EMS organisations have grown in technical and scope sophistication. These services are operated by trained and regulated care-givers. Qualifications may be from short courses or longer university programmes and professional registration is conferred by the HPCSA.

EC Providers constitute the largest professional board at the HPCSA. By October 2016, there were 71 754 providers registered with the PBEC (Table 2). This is constituted by 58 537 Basic Life Support providers (BAA, in the supervised category), 9570 Intermediate Life Support providers (ANA), 511 Operational EC Orderlies (OECO), 1082 EC Technicians (ECT), 468 Emergency Care Practitioners (ECP's) and 1586 Paramedics (ANT). These EC providers have differing levels of autonomy and skill (Table 5). EMS is a provincial mandate so standards of operation may differ between and within provinces due to differences in strategic health priorities and available resources (Annexure 5 provides the provincial distribution of registrations). The private sector was excluded because of a potential conflict between the public interest and business interests.

KwaZulu Natal and the Western Cape were selected for this study due to limitations of cost and researcher experience of EMS organisations in these provinces. The HPCSA PBEC has only one board manager and one chairperson. The HPCSA has only one general manager for all boards. All three, were included as experts on the regulatory context of EC. The qualitative part of Phase I of the study intended to generalise toward theoretical propositions, whilst Phase II (quantitative methods) was intended to generalise toward the EC population. This influences the sampling frame.

Table 5: Persons registered with the PBEC[34] by qualification, registration category and autonomy [as at 03/10/2016] (HPCSA, 2016)

Level of Autonomy	Qualification	Skill level (Life Support)	Registration Category	KZN	WC	RSA
Supervised Practice	Short course (4 weeks)	Basic	Basic Ambulance Assistant (BAA)	8,293	3,710	58,537
Independent Practice	Short course (12 weeks)	Intermediate	Ambulance Emergency Assistant (AEA)	1,860	1,569	9,570
	Military Short course		Operational EC Orderly (OECO)	44	62	511
	Critical Care Assistant (9-month short course)/ National Diploma (3 years)	Advanced	Paramedic (ANT)	313	393	1,586
	National Certificate or Diploma (2years)		EC Technician (ECT)	82	248	1,082
	Bachelor's Degree (Four years)		EC Practitioner (ECP)	116	135	468
			Total	**10,708**	**6,117**	**71,754**

3.1.1 The Sampling Frame

The challenge of sampling was that although the registered practitioners amount to 71, 754, less than 20,000 combined posts exist in the public and private sector.

Table 6 represents the more relevant sampling frame of this study from four data sites (human participants). As a frame, these are the most eligible participants. Data was provided by relevant managers and are correct for the year in which the data was collected. Senior students are those students in the final leg of the highest qualification offered. In the cohort study, 443 is the population eligible for sampling in the sites selected from a district total of 768 (City of Cape Town and Cape Winelands) and a Provincial total of 1,362. Annexure 6 provides the staffing profile for the WCG: EMS and sites sampled.

[34] This reflects region at the time of registration, unless amended. EC practitioners enjoy mobility and may be employed in EMS or other organisations in places different to their stated registration details.

Table 6: Sampling Frame for Focus Groups, Survey, Non-participant Observation and Cohort study

Study Site & Participants	HPCSA	Higher Education Institutions (HEI)		College of Emergency Care (COEC)		EMS	
	Policy makers[a]/ regulators	Educators [b,c,d]	Senior Students [c,d] Total	Educators [a,b,c,d] *	Students across all short courses[c,d]	Operational staff across all qualifications*	
Pretoria: 1 of 12 Boards	3 Power-brokers	-	-	-	-	Study Sites	Province
KZN	n/a	9	20/154	30	72	392	2,121
WC	n/a	12	30/258	30	259	443[d,e]	1,362
Total	**3**	**21**	**50/412**	**60**	**331**	**835**	**3,483**

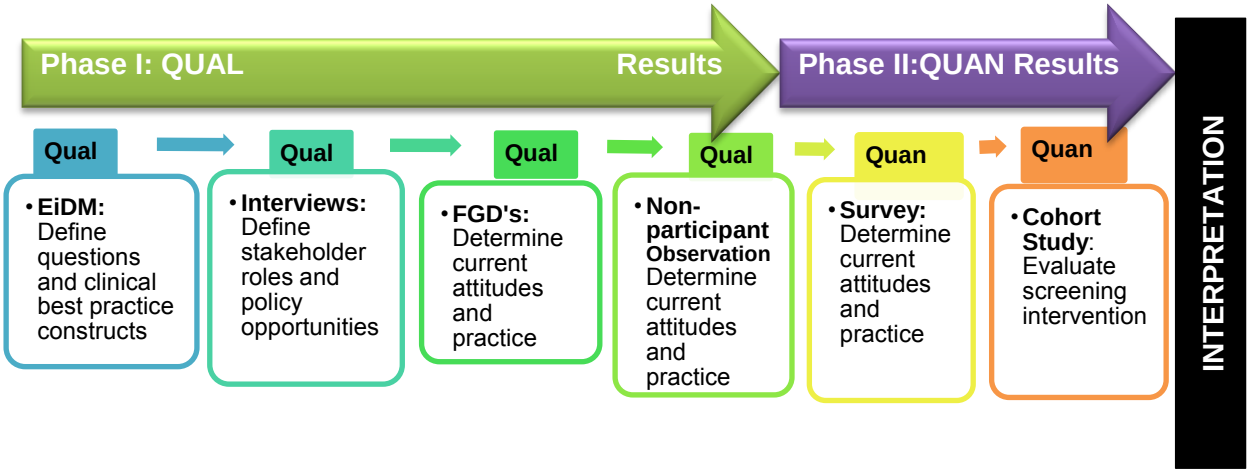
Key: a=Interviews, b=Focus Group Discussions, c=Non-Participant Observation, d=Survey, e=Cohort study

3.2 Research Design

The outline of the research design is presented in two phases: Phase I, Qualitative Description and Phase II, Quantitative Methods. The details of each phase are presented in this chapter. The appropriateness of the research design is first considered below.

A mixed methods research design was employed (i.e. Sequential Exploratory design) with a qualitative approach first (Phase I) that included a content analysis of literature (EiDM), interviews with key informants, focus group discussions (FGD's) and non-participant observation (N-PO). Phase II included a survey and cohort study with an equal emphasis between qualitative (QUAL) and later quantitative (QUAN) components. The sequential mixed methods design can be found below in Figure 8. Sequential exploratory design allows for variation in data collection that should lead to greater validity and ensures the greatest accuracy to the information/data collected. It also attempts to protect against pre-existing assumptions that the researcher may have. The methodology follows a sequential line of qualitative inquiry with results first and is then followed by quantitative methods and results. The 'mixing' occurs in the interpretation of both results (Ivankova, Creswell, & Plano Clark, 2014, p. 277).

Figure 8: Sequential exploratory mixed methods design



The sequence is such as the initial objective is to determine what the DV implications for EC are and subsequently what the reciprocal implications from clinical interventions are. It is essentially exploratory since the qualitative data and results build on the quantitative data. The emphasis was intended to be equal between the quantitative and qualitative phases. The exploratory design contrasts with the explanatory and sequential embedded design (Creswell, 2008) meaning the explanatory design is where qualitative data helps explain or build upon initial quantitative results and the embedded design is particularly useful when a researcher needs to embed a qualitative component within a quantitative design as in the case of an experimental or correlational design (Creswell, 2008; Cresswell & Plano Clark, 2007). The sections that follow summarises the multiple methods, estimated and actual samples, duration/geography and scope of Phase I and Phase II.

Phase I: Qualitative Descriptive (QD) Research

Qualitative description, as a methodology, is introduced and its appropriateness to this study is argued. This section includes an explanation of the methods used (3.2.2-3.2.4) and their relevant sampling and data collection strategy.

3.2.1 Qualitative Description

The goal of Qualitative Descriptive (QD) studies is a comprehensive summary of events in the 'everyday terms' of those events. (Sandelowski, 2000). Junior health researchers across disciplines of health science, and in particular nursing research, appear suited to this design. In an analysis of over 1000 nursing articles published between 2005-6 Polit and Beck (2009) found that 52% were qualitative descriptive in design. Not unlike other types of qualitative research, these inquiries are efforts to understand poorly understood phenomena that are not easily quantifiable. EC as an emerging profession, with such poorly understood phenomena, may benefit from QD as its own constructs undergo emergence. The benefits of QD are that it facilitates understanding of a selected phenomenon. It can be used with a variety of theoretical approaches, sampling techniques, and data collection strategies (Colorafi & Evans, 2016).

> Researchers conducting qualitative descriptive studies stay close to their data and to the surface of words and events. [QD] designs typically are an eclectic but reasonable combination of sampling, and data collection, analysis, and re-presentation techniques. [QD] study is the method of choice when straight descriptions of phenomena are desired (Sandelowski, 2000).
>
> [QD] is a useful qualitative method in much medical research if you keep the limitations of the approach in mind. It is especially relevant in mixed method research, in questionnaire development and in research projects aiming to gain first-hand knowledge of patients', relatives' or professionals' experiences with a particular topic. (Neergaard, Olesen, Andersen, & Sondergaard, 2009)

Qualitative description is suited to obtaining minimally theorized answers to questions of special relevance to practitioners and policy makers (Sandelowski, 2000). Examples of such questions asked in this study include: What are the concerns of people about DV responses by EMS practitioners? What are EC educator and provider responses (e.g., thoughts, feelings, attitudes) toward DV burden and responses? What reasons do people have for using or not using an EMS service or DV reporting procedure? Who uses the EMS and when do they use it? What factors facilitate and hinder recovery from a DV incident?

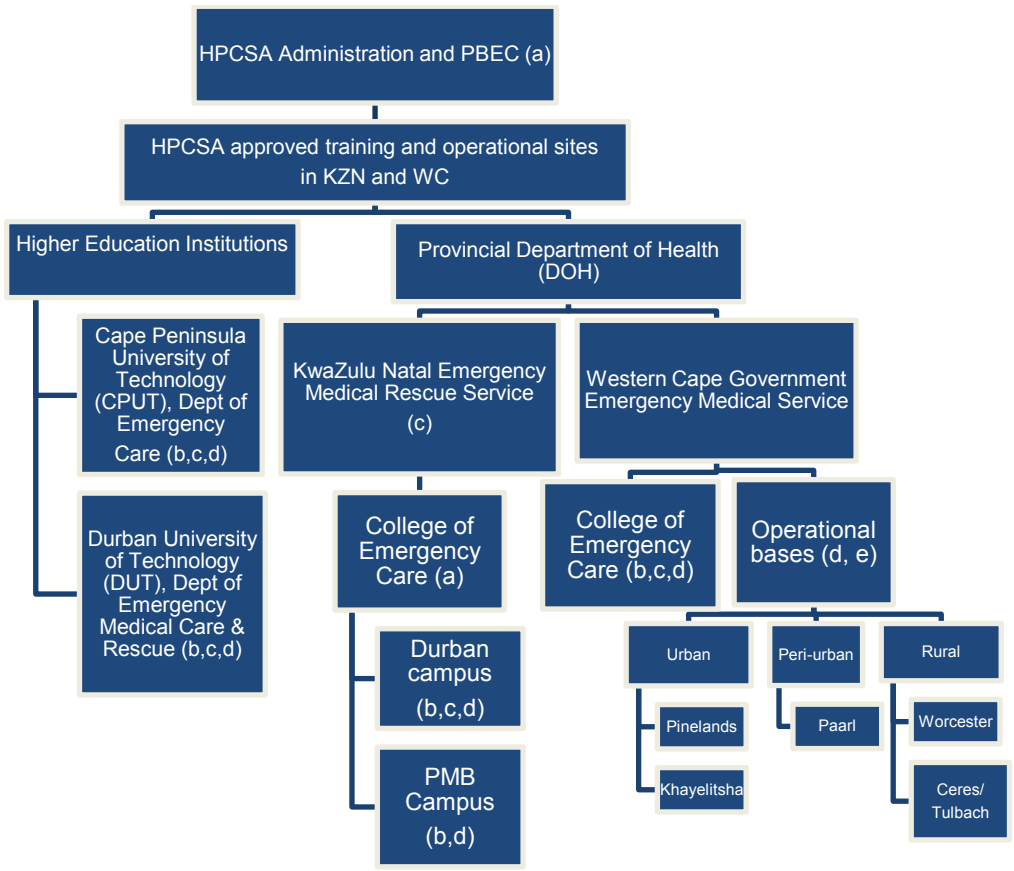
Table 7: Qualitative methods, duration, sample & scope

Data Collection Method	Estimated Sample	Duration/ Location	Actual Sample	Scope
PHASE I: QUALITATIVE				
EiDM: Critical Synthesis of Literature	n/a	6 consecutive months, multiple online databases available from the Cape Peninsula University of Technology	53 of 164 articles selected from 1999-2011	Define questions and constructs through theoretical, empirical or contextual evidence. Suggest best evidenced practice by EC providers
Interviews: • *EMS Management* • *Regulatory Management*	2-3 2-3 3	• 2 EMS operations managers from KZN (60 minutes each). • 2 EMS education managers (60 minutes each). • 3 HPCSA Key-informants (90 minutes each).	2 2 3	Provide role definition insights and challenges in curriculum and regulation and DV policy development opportunities by key informants or power/knowledge-brokers.
Focus Group Discussions • Educators	36-64	70-80 minutes X 5	48	Provide the opportunity for intersections between EC education, practice & regulation to emerge.
Non-participant Observation: • *Simulated Practice*	24-36	• A total of 60 hours/ 4 sites over 15 weeks	248	Observe simulated EC practice for DV and non-DV related cases to assess how DV presence or absence might alter/affect practice.
INTERPRETATION AND FINDINGS OF PHASE I				

Answers to the questions above were achieved by sampling for diversity, data collection by individual and focus group interviews and data analysis by qualitative content analysis (Table 7 summarises each method and related scope). Sandelowski (2010) noted that QD studies produce findings closer to the data ("data-near") than studies within such traditions as phenomenology or grounded theory, but that good qualitative descriptions still have some interpretive obligations. The term "interpretive description" (Thorne, 2008) recognises the interpretive potential of qualitative description in that it requires integrity of purpose from an actual practice goal. It therefore seeks to generate new insights that can help shape applications of qualitative evidence to practice and generation of themes or patterns that capture what has been said. The approach for Phase I was based on the assessment of acceptability for qualitative description by Lambert & Lambert (2012). Phase I draws from naturalistic inquiry, which purports a commitment to studying something in its natural state (to the extent that was possible within the EMS context of the research arena). This phase

of the study has no pre-selection of study variables, no manipulation of variables, and no prior commitment to any one theoretical view of a target phenomenon. This study may have grounded theory overtones, because it used constant comparative analysis when examining the data. However, the Phase I component of the study is not claimed to be grounded theory (Charmaz, 2005), since alone it is not able to produce a theory from the data. Purposeful sampling from the sites in Figure 9 was used to obtain data deemed rich in information for the purpose of data saturation. Each method is unpacked below.

Figure 9: Participant/Data sources



Key: a=Interviews, b=Focus Group Discussions, c=Observations, d=Survey, e=Cohort study

In Phase I, the qualitative component of the study, the decision regarding the number of participants was a reflection of the study's purpose. Staff sampled was full-time personnel, all HPCSA registered. The patient population was not sampled here. It is documented that

implementation of appropriate responses to DV patients were deficient. The opportunity here was to foreground EC provider voices initially.

In reflection, the QD approach is the design of choice for this method section as a straight forward description of poorly understood phenomena or aspects of experiences was desired. This is supported by a recent review of literature (1990-2013) differentiating descriptive and interpretive phenomenological research approaches (Matua & Van der Wal, 2015). The risk of misnaming the design as grounded theory is present due to the constant comparative analysis and desire for a theoretical explanation in an emerging profession. In effect, the design of Phase I of this study is qualitative description.

3.2.1.1 Phase I: Data Collection Procedure

Data collection focused on discovering the nature of the specific events under study. Thus, data collection involved minimal, structured, open-ended, individual and focus group interviews. It also included observations, and evidence for the EC role in DV. The analysis was purely data-derived in that codes were generated from the data in the course of the study. Not unlike other qualitative research designs, qualitative descriptive studies are generally characterized by simultaneous data collection and analysis (Lambert & Lambert, 2012). The presentation of data involves a straight forward descriptive summary of the informational contents of the data that is organized in a logical manner.

Phase I data is arranged by: categories/subcategories; actual chronology of events; most to least prevalent themes and describing an event from the perspective of more than one participant. The outcome is a descriptive summary of the methods organized in a way that the findings are relevant for the audience for whom it was intended. The procedures of Phase I are described in the over-arching step by step guide in the pursuit of DV-EC intersected theory (Table 8).

The design phase included a review of technical literature to define the question and *a priori* constructs in order to focus efforts and sharpen external validity.

Table 8: The process of proposition development (Pandit, 1996, pp. 2-3)

PHASE		ACTIVITY	RATIONALE
RESEARCH DESIGN PHASE			
Step 1	*Review of technical literature*	Definition of research question/ Definition of *a priori* constructs	Focuses efforts/ Constrains irrelevant variation and sharpens external validity
Step 2	*Selecting cases*	Theoretical, not random, sampling	Focuses efforts on theoretically useful cases (those that test and/or extend theory) such as EC regulation, EC education and EC practice
DATA COLLECTION PHASE			
Step 3	*Develop rigorous data collection protocol*	Employ multiple data collection methods: Qualitative	Increases reliability/ Increases construct validity/ Strengthens emergence of theoretical propositions by triangulation of evidence/ Enhances internal validity/ Synergistic view of evidence
Step 4	*Entering the field*	Flexible and opportunistic data collection/ overlapping analysis is permitted	Speeds analysis and reveals helpful adjustments to data collection/ Allows investigators to take advantage of emergent themes and unique case features
DATA ORDERING PHASE			
Step 5	*Data ordering*	Arranging events chronologically	Facilitates easier data analysis/ Allows examination of processes
DATA ANALYSIS PHASE			
Step 6	*Analysing data*	Use open coding, Use axial coding, Use selective coding	Develop concepts, categories and properties/ Develop connections between a category and its sub-categories/ Integrate categories to build theoretical framework/ All forms of coding enhance internal validity
Step 7	*Theoretical sampling*	Literal and Theoretical Replication	Confirms, extends, and sharpens theoretical framework/ (go to step 2 until saturation)
Step 8	*Reaching closure*	Theoretical saturation	Ends process when marginal improvement

The selecting of data slices, such as regulator perspectives, educator and clinical experiences and simulated practice focused efforts on theoretically applicable cases. In the data collection phase, the literature review increased reliability and construct validity. The interviews with managers and regulators were useful in identifying policy gaps and enabling/disabling factors.

3.2.1.2 Phase I: Qualitative Data (Interviews, FGDs & N-PO) Processing and Analysis

Interviews and FGDs were transcribed and verified as a true reflection of the digital audio recording. For N-PO, memos and video recordings were relied upon. This qualitative data was managed using relevant software (such as Microsoft Office Word®, OneNote® and FreeMind®0.9.0[35]) and was manually analysed (Henning et al., 2010). An electronic record was backed up on an external hard drive and hard copies of data were kept in a lockable storage area within a locked office, with access control. Before analysing the data it was chronologically ordered, to facilitate ease of data access and to allow appraisal of the impact of critical incidents of the time.

Using a qualitative, critical-interpretive lens in the data analysis, the N-PO sought to provide in-depth ('thick') rather than superficial ('thin') descriptions of what was observed (Henning *et al*., 2010). Content analysis principles guided the analysis of the interviews and by what emerged in the literature review, N-PO and FGDs. These data collection methods and analysis preceded Phase II.

The three basic elements of Qualitative Description are concepts, categories and propositions. Concepts are the basic units of analysis since it is from conceptualization of data, and not the actual data, that theory is developed (Pandit, 1996: 1).

> Theories can't be built with actual incidents or activities as observed or reported; that is from "raw data". The incidents, events, happenings are taken as, or analysed as, potential indicators of phenomena, which are thereby given conceptual labels…Only by comparing incidents and naming like phenomena with the same term can the theorist accumulate the basic units for theory (Corbin and Strauss, 1990:7).

[35] FreeMind®0.9.0 is open-access digital mind-mapping software that enables coding of data.

Categories, in comparison to concepts, are higher in level and more abstract than the concepts they represent. Comparisons are made to highlight similarities and differences that serve to integrate the theory. The third element: propositions, serve as theoretical constructs, and indicate generalized conceptual relationships between a category and its concepts and between discreet categories. The process of coding is crucial to the development of concepts mentioned above. 'Coding' "…represents the operations by which data are broken down, conceptualized and put back together in new ways" (Strauss and Corbin, 1990: 57). Open coding refers to the descriptive labelling of phenomena. Open coding, through comparison and fracturing, gives rise to deconstructed concepts and categories. Axial (interpretive) coding puts data back together by making connections between a category and its sub-categories. Selective coding (patterning/themes) integrates categories to form the initial theoretical framework. A (conceived, descriptive, narrative) story line about the central phenomenon of study may now be generated or made explicit. The writing of memo's (code memos, theoretical memos and operational memos) assisted with organizing data during coding. The goal was to find theoretical saturation in the QD, or return to theoretical sampling.

In Phase I, a full, deep coverage of the data was necessary during initial data collection, when the main categories emerged. Subsequently, data collection was only required on categories for the development of category properties or propositions (Pandit, 1996; Glaser & Strauss, 1967). Sampling continued until saturation was reached. Categories were not all equally relevant and therefore did not deserve the same depth of inquiry. Categories (those themes that have the greatest explanatory power) were saturated to the extent of the researcher's inductive reach. A theory is said to be saturated when it is stable in the face of new data and is rich in detail (Pandit, 1996).

EC is a highly prescribed (regulated) discipline as the HPCSA is a statutory organisation. Relevant HPCSA EC care curricula provided reference data on the capacity and training of EC providers, as it related to GBV or crisis intervention, in general. Policy documents (as discussed in Chapter 2) relating to health sector screening, landscaped the HPCSA's documented historical and potential role in health sector screening and other interventions. The purpose of the interviews was to appraise the discourse of GBV at the level of the professional regulator as both 'actor' and 'script writer'. The triangulation of methods was intended to enhance construct and content validity. Data was ordered chronologically for ease of analysis and consideration of processes.

3.2.1.3 Phase I: Internal and external validity

Internal validity is a confirmation of the correctness of the study design. Internal validity in this study was assured with pilot testing of the proposed survey instrumentation to ensure that the instrument was clear and unambiguous. The pilot survey (n = 141) highlighted internal consistency of all but one index and was able to show associations. It was a self-evaluation of the current clinical practice of GBV intervention by EC providers within the EMS. In terms of construct validity, the pilot study validated new (from other findings in Phase I) and existing constructs (in the GBV discourse) and indicated observable relationships between demographic factors, DV beliefs and clinical practices of a cross-section of EC providers. Triangulation of the results enhanced the validity of findings. Triangulation validates the methodology by an examination of the results from several perspectives.

The guide for reproducing the QD approach in this study is summarised in Table 8. These clearly specified operational procedures serve to enhance construct validity. Internal validity is enhanced by establishing statistically significant associations and hence, credibility of the pilot survey findings. In the interest of external validity, the domain to which the study's findings was generalised (theoretically in Phase I and statistically in Phase II) is some emergent theory (defined in Chapter 6) which may be of particular significance to the EC community. The different methods are implemented with individual methodological rigour and converge in the analysis. Clarity and rigour of the QD process and particularly of data collection operational procedures lends reliability to the study.

Ensuring rigor of findings is a central Qualitative Description principle (Colorafi & Evans, 2016). The strategy to enhance rigour of the analysis is based on the report by Milne & Oberle (2005). Authenticity was achieved as the informants were free to speak. Sampling was purposeful and flexible. Data collection was participant-driven. The informants' voices were heard and where possible, richness rather than superficiality of data was promoted. Focus group interviews were conducted to diminish the role of the researcher and informants' perceptions were accurately represented, first by accurate transcription and then by content analysis (ensuring data-driven coding and categorizing). Credibility was achieved through capturing and portraying a truly insider perspective. Reflection on the critical appraisal applied to every research decision and integrity was promoted by

constantly reflecting on researcher bias. A dual role (clinician/researcher/interviewer) was played during the interviews and in the process of analysing. Informants' validations/member checking occurred in the summary of the interviews central agreements and disagreements. Peer review/researcher triangulation was particularly useful in preventing poorly supported leaps of inductive logic.

Reliability is concerned with the reproducibility of the study with the same results. A review of technical literature was first undertaken, in order to define the research question and *a priori* constructs. This has the benefit of focusing effort, constraining irrelevant variation and sharpening external validity (Pandit, 1996). The literature review took the form of an exposition with both a narrative and critical analysis to ascertain the current literary discourse on role and scope of EC provider's response to GBV. The literature review was considered secondary evidence upon which critical reflections and linkage to primary data occur. An analysis of the literature (as the first case) led to an initial theoretical framework that was extended and tested by additional cases selected one at a time and later by the survey and cohort study.

What of external validity? For the EiDM implemented here there is methodological coherence (Naidoo, 2011) with the public health interest of the EiDM design (Health Evidence, 2011; Annexure 4). The critical appraisal tool (Annexure 2) satisfies criteria for construct, content, face and criterion-related validity. Findings have local relevance with international comparability.

The critique of EBM includes a limited focus on 'effectiveness' and randomised controlled trials (RCTs), that it is simplistic (what works best for simple interventions), exclusionary (ignores other questions/evidence), difficult (requires dedicated expertise), expensive (time consuming), wasteful (excludes poorly reported evidence) and paralyzing when no decisions are made without evidence (Ellison, 2007). The former editor of the South African Medical Journal (SAMJ) agrees (Ncayiyana, 2007, p. 7):

> What is new is EBM's exclusive identification with systemic reviews and RCTs that has led to perceptions that diagnostic approaches and interventions not validated by RCTs have little or no validity. Furthermore, EBM zealots have tended to understate its limitations, such as the fact that RCT evidence relevant to many clinical situations simply doesn't exist; that many clinical questions do not lend themselves to evaluation by RCT; that RCT evidence is population-based, and 'does not answer the primary clinical question of what is best for the patient at hand'; that patient

> management choices are governed as much by evidence as by the limitations of time, space and resources; and that the EBM approach itself is not evidence based, there being no RCT evidence showing that it improves patient care (Ncayiyana, 2007, p. 7).

Stoic implementation of the EBM-aligned method (Straus, et al., 2008) assured a valid review process (Glasziou, Del Mar, & Salisbury, 2003). Aguinaldo (2004) argues that in positivist approaches, it is acceptable to be asking about research: *"Is this valid?"* In non-positivist designs however, he suggests a social constructivist move toward: *"What is this research valid for?"* The author argues that this review method is both internally and externally valid and that the research is valid for supporting methodological growth in EC and in providing evidence-informed answers to the study question.

3.2.2 Key-informant Interviews with HPCSA Power-brokers

Purposively sampling regulatory perspectives, those of EC educators and EMS operational staff was crucial to a 360° view of the EC profession[36]. Of the 12 Professional Boards (HPCSA, 2016), only the PBEC was of direct relevance. The HPCSA managers were sampled (for interviews) to provide perspectives on public protection and practitioner guidance insofar as they relate to GBV. An analysis of HPCSA ethics guidelines and other relevant emergency medical care curricula/policy and the literature review provided terms of reference for interviews. This was to appraise the critical discourse of GBV at the level of the EC profession regulator, as a power broker, with its many actors (or perhaps 'directors'). The structure involved a brief introduction and obtaining of informed consent followed by past, present and future roles of EC in DV responses–and in particular the role and function/ing of the regulator. Two senior salaried members and one non–salaried member of the HPCSA were interviewed. Preceding these interviews were interviews with 2 EMS operations managers and 2 EMS education managers to highlight any issues worthy of pursuance with the HPCSA.

The interviews were open-ended and structured only in that past experiences of DV-related policy and practice was enquired into as well as how participants envisaged future EC roles

[36] Data triangulation (synergy of multifaceted investigations) served to enhance construct validity and reliability.

in DV responses. This resulted in a consistent process of data collection across all interviews. The setting for interviews was the work spaces of the interviewees, for their convenience. They were invited directly by the researcher. The procedure was to introduce the study purpose and to indicate ethics approvals and rights of participants. Informed consent procedure resulted in signed consent being granted. The HPCSA representatives were asked open ended questions starting with: *"What in their opinion and experience is the current and future role and scope of the EC profession with regard to GBV and in particular, DV cases?"* Through paraphrasing of their responses, the socio-political landscape and operational EMS challenges to DV responses was explored. The signal for the interview closure was repetitive answers and time (60-90 minutes). Interviews were digitally recorded using a portable voice recorder and memos were handwritten.

3.2.3 Focus Group Discussions

EC educators were considered (for focus groups) as they are instrumental in shaping the EC ideology and clinical practice. Prehospital EC educators and clinicians at HPCSA-accredited training centres and Provincial EMSs (as knowledge-brokers) participated in one of five focus group discussions (FGDs) of between 8-10 participants to verify and expand the emerging theoretical propositions from the literature review, questionnaire and non-participant observation (N-PO) and to make new observations with respect to ideological perspectives and praxis orientation of EC and GBV intervention. The FGD was digitally recorded and saved using password protected files, accessible to only the transcriber and researcher. The structure entailed a brief introduction of the study followed by clarification on any issues concerning the information sheet and informed consent. The discussion was guided by: (a) a reflection of current practice, (b) experiences and expectations; associated explanations for the same and (c) consideration of future forensic and emergency roles in response to DV.

In terms of procedure, FGDs were convened, 1 at each of the 5 training sites subsequent to permission from the management since this took place during work hours. Participants were invited through the official channels of communication in their department. Upon introducing the topic and purpose, informed consent was sought. The discussion was voice recorded. The researcher facilitated all the FGDs. Participant's qualification was not introduced so as to deliberately avoid the influence of status on the discussion. The

discussion centred on: *"What in their opinion and experience is the current and future role and scope of the EC profession with regard to GBV and in particular, DV cases?"* Handwritten memos assisted in revisiting issues raised. Reduced participation and repeated responses signalled the end within a 60-90 minute time-frame.

3.2.4 Non-participant Observation (N-PO)

Simulated clinical practice situations in both violence and non-violence contexts were observed in simulation laboratories across four HPCSA accredited EMS training sites to evaluate current clinical practice, praxis orientation and ideological perspectives of EC providers. Violence and non-violence contexts were evaluated to portray current praxis orientation and GBV ideology of EC providers. Observations of these differing settings were compared and contrasted to detect emerging codes. Two hundred and forty-eight EMS students in all EMS programmes performed 124 observed simulations of between 15 and 40 minutes each. The observations included the reflection after the simulation as to why they performed the way they did.

Clinical practice simulations constitute a major assessment for EMS programmes. Simulations give expression to the theory and protocols. Since there is no clinical internship for EC, competence in simulations are proxy indicators for clinical competence, patient safety, protocol compliance and therefore professional registration with the HPCSA. Hence, they are a useful data source to postulate practice and examine manifestations of teaching and learning. These simulations were the regular, prescribed, student or staff initiated simulations conducted in the ordinary course of their study. The researcher did not construct the simulation script.

EMS students, registered across all courses, were observed whilst role-playing the care-giver in the simulation laboratory during the normal practical time allocation. No examination simulation was observed as these have narrowly constructed outcomes and ethical concerns. The preparation for the routine simulation provided for a wider range of simulations without the pressure and ethical constraints of an examination. Students were introduced to the study and informed consent was sought. The researcher observed simulations in practice and only participated in the routine debriefs at the end of each simulation. The simulated practice was recorded (audio and visual) using a Samsung Tablet® or Samsung Galaxy Note Edge®.

The N-PO analysis was structured using that presented by Reysoo[37], starting with a situational map of the simulation venues in which the observations occurred. The activities there-in are discussed in terms of what could and could not be conducted. These limitations are followed by an analysis of the use of space and the self-defining nature of the EC simulation. The organization of activities will present the structure and function of the simulation as a paedagogic device. The use of the setting in an educational context is also raised. Field notes were recorded as direct observations with little abstraction.

[37] Dr Fenneke Reysoo, of the Graduate Institute of International and Development Studies, Geneva, presented this approach to the South Africa Netherlands Research Programme for Alternatives in Development (SANPAD) Research Capacity Initiative (RCI) 2011 workshops for Doctoral students, at which I was an attendee in Durban, South Africa.

Phase II: Quantitative Methods

Phase 2 methods refer to the survey and cohort study depicted in Table 9 below.

Table 9: Quantitative methods, sample, duration/location and scope

PHASE II: QUALITATIVE				
Data Collection Method	**Estimated Sample**	**Duration/ Location**	**Actual Sample**	**Scope**
PHASE II: QUANTITATIVE				
Survey: Pilot survey with educators and senior clinicians started in **Phase I** Operational EC providers in **Phase II**	150	KZN and WC	**Total: 486** 141	Validate new/existing constructs and indicate observable relationships between demographic factors, DV beliefs and clinical practices of a cross-section of EC providers.
	250	WC only	345	
Cohort Study of EC providers at randomly selected bases in Cape Winelands & City of Cape Town	-	Retrospective Cohort (12 weeks: 40,354 cases; 30 of 170 Clusters were sampled)	3633 cases sampled of 7861 cases screened (4228 excluded)	Infer probable causality between DV intervention and detection & referral.
	250	**Intervention:** 75 'followed up'	329 (74,23%) trained of 443 EMS workers	
	-	Prospective Cohort (12 weeks)	453 cases (233 cases of DV detected, 220 were not detected or uncertain)	

3.2.5 Survey: Domestic Violence Responsivity Questionnaire

This method was intended to answer the question: *Where do EC educators and providers ideologically and clinically locate themselves relative to the health sector response to GBV and the pathology of DV?*

When operationalised, this meant an:

i. Evaluation of the ideological assumptions/ perspectives of EC providers, educators and the profession-specific regulator with regard to GBV and in particular, DV.

ii. Evaluation of the current clinical practice of GBV intervention by EC providers within an EMS.

The survey instrument development began in the researcher's Master of Public Health thesis (Naidoo, 2007) where statistical and content input was sought from the Medical Research Council. Designed to quantitatively measure DV responsivity by EC providers; the survey documented demographic information, DV knowledge and EMS experience, self-perception of learning, DV-related experience and relevant patient feedback. As a self-administered questionnaire (Annexure 7), it was previously part-tested and the results published in a peer-reviewed journal (Naidoo, Knight, & Martin, 2013a). An MRC expert on GBV found the questionnaire to be relevant during its development. It was informed by local and international literature (Padayachee & Singh, 2010; United Nations Inter-agency Standing Committee, 2005). It sought self-reported data on the EC provider experience and current and prospective DV role in the prehospital setting through Likert scales (of agreement or ranges), and some open-ended questions that would be coded into categories for analysis. A pilot study was conducted to test the instrument in Phase 1. The myth index was the only index that could not provide statistically significant findings but was of interest as it confirmed a belief in myths contained elsewhere in the questionnaire. The EMS Worker Self-Efficacy Scale and the Perceptions of Medical Capacity Scale have been proven to be reliable as an internally consistent measure of self-efficacy and perceptions of capacity, respectively.

A survey of EC provider knowledge, attitude, and beliefs was conducted amongst 486 (n) purposively selected educators and clinicians in prehospital EC (Annexure 7). The pilot had 141 (n) senior practitioners and educators whilst 345 (n) were only clinicians in the WC cohort study. The descriptive data in the survey (piloted during Phase I and implemented in Phase II) was intended to pilot the instrument and to indicate any directly observable relationships that might serve to introduce concepts to the focus groups and later to corroborate the findings from qualitative data. All participants of the cohort study self-administered a survey. The study sought to include all the HPCSA-accredited public EMS and education sites in 2 provinces, KZN and WC for comparability and scale. This involved one university, one provincial college and one provincial EMS from each province. Phase II,

however, was limited to the WC only due to concerns over heterogeneity, time and financial constraints.

The questionnaire was implemented at the start of each of the 12 workshops of the cohort study. It was self-administered. Each participant received a unique number to use that anonymised the response (but not necessarily the participation in the study). They completed an informed consent process and voluntarily completed the survey. It took 20-30 minutes to complete. None of the participants had been involved in the pilot study. Upon completion of all the questionnaires, the data was entered into an Excel® spreadsheet by data collectors, cleaned and made ready for statistical analysis. The pilot analysis (in Chapter 3) was kept separate from the sample in Phase II so as not to devalue the analysis.

In terms of survey data analysis, data were captured and cleaned in Microsoft Excel®. Statistical analysis was conducted using 'R Statistical Computing' (R Core Team, 2015), an open source software package used by academics and statisticians worldwide. This was first performed with a pilot sample of 141 respondents and was found to be stable. The implementation in EMS operations sampled a further 345 respondents (a total of 486).

Three multi-item scales were constructed out of sets of questions in the questionnaire: The myth index scale, EMS worker's self-efficacy scale and the medical capacity scale. Cronbach's Alpha, a statistic commonly used for measuring the reliability of a multi-item scale, was used. A multiple linear regression model was developed to allow for multivariate analysis of the relationship between the dependent variable (self-efficacy index) and independent variables (sex, age, site, race, experience, and qualifications). Annexure 8 provides detail on this data's multi-item scales and the multiple linear regression model.

3.2.5.1 Survey Pilot Study

As the survey instrument was researcher-designed, a pilot study was implemented (in Phase I) to validate the effectiveness of the instrument, and validate the value of the questions to elicit the right information to answer the primary research question: Where do EC educators and providers ideologically and clinically locate themselves relative to the health sector response to GBV and the pathology of DV?

In the pilot survey, data collection procedures involved the researcher purposively inviting EC educators, senior students and operational staff across the seven sampled sites in both provinces over a six month period[38]. The study topic and ethical requirements for informed consent was introduced verbally and by an information sheet. The questionnaire was self-administered and returned to the researcher. In terms of characteristics, the sample was a cross section of the EC qualification frame, with the exception for communications centre staff who were not sampled. Of 150 purposively sampled, 141 questionnaires were returned.

Analytical and descriptive statistics are employed in the analysis of the questionnaire. Data were captured cleaned and categorised in Microsoft Excel®. Statistical analysis was conducted using 'R Statistical Computing', an open-source software package which is used by statisticians and other academics worldwide (R Core Team, 2015). References to questions refer to those in the questionnaire. To aid the construct validity of the qualitative analysis, open and axial codes from the survey data were mind-mapped using FreeMind® software.

3.2.6 A Cohort study of DV Screening Tool Implementation: An Observational Analytical Study (with a descriptive component)

When considering the possibility of a causal relationship between routine screening and DV case detection, knowing with certainty that the training and routine screening preceded the DV case detection is important (Joubert, et al., 2010). The cohort design begins with measuring the exposure of interest among people whose EC-givers are free of DV training and routine screening (retrospective cohort), followed by ascertaining the occurrence of DV case detection in the presence of DV training and routine screening (prospective cohort); thus ensuring that the exposure to DV pathology training and screening methodology has preceded the DV detection.

[38] The sample for the pilot was *ad hoc* and not determined scientifically. This is a key difference from the main survey of the EC providers in the WC that followed in the cohort study.

*"*Study design refers to the structured approach followed by researchers to answer a particular research question." (Joubert, et al., 2010, p. 77).

Considered quasi-experimental, a cohort study would best answer the Phase II research question:

Does implementation of a screening tool by EC providers improve the detection rate of victim exposure to DV and improved referral rate of female victims (14 years and older) presenting to a public emergency medical service (EMS) in the City of Cape Town and Cape Winelands?

This question is derived from applying the "PICO (TT)" model described below.

3.2.6.1 PICO(TT) model for clinical questions

"PICO(TT)" is an abbreviation to promote relevance and completeness of a research question of clinical significance (National Collaborating Centre for Methods and Tools, 2012) and refers to: *population, intervention, comparison, outcome, timing and type* of study. This was used to shape the clinical question in the cohort study (Table 10)

The PICO abbreviation is widely used in evidence-based medicine and epidemiology (Aslam & Emmanuel, 2010). It was used in this study as the researcher thought it may be helpful in defining and clearly stating the research question (Table 10). Cohort studies are suited to studies of prognosis, aetiology or prevention (University of Illinois at Chicago [UIC]). Cohort studies have also been used in studies of domestic violence screening. In a cross-sectional cohort, female maternity patients in Queensland (N = 1313) were accepting of screening for domestic violence and the authors argue that, where health providers are suitably educated, it should be included when taking a routine health history (Webster, et al., 2001).

Table 10 below categorises the PICO (TT) element, the emerging clinical questions and the application for this study.

Table 10: PICO (TT) element, clinical questions and study application

PICO(TT) Element		Clinical questions	Study Application
P	Patient, Population, or Problem	How did I describe a group of patients similar to mine?	The prospective cohort is constituted by female EMS cases attended to by EMS personnel (across all qualifications) in a continuous three-month period (July-October 2016) where DV screening training and routine implementation occurred. Currently, EMS providers do not routinely screen for DV. Upon screening and referral training, all female EMS cases attended to by HPCSA-registered EC providers employed in a public EMS system in the City of Cape Town and Cape Winelands will routinely screen for past or present DV exposure and document DV case detection.
I	Intervention, Prognostic Factor, or Exposure	Which main intervention, prognostic factor, or exposure did I consider?	Occurrence of DV detection following implementation of routine DV screening (Annexure 1) during EC history taking and diagnosis of all presenting female EMS users (14 years and over) subsequent to DV screening and referral training for EMS personnel from randomly sampled bases in a public EMS system.
C	Comparison or Intervention (if appropriate)	What was the main alternative to compare with the intervention?	Female DV cases detected and recorded as such by EMS personnel at the same base in the same three month period in the preceding year where no DV screening training and no routine implementation occurred was the comparator.
O	Outcome you would like to measure or achieve	What could I hope to accomplish, measure, improve or affect?	**Primary Outcomes:** Change in DV case detection rate/ Change in DV case referral rate The rate of DV cases detected and referred from total cases from the period in the preceding year (historical cohort) serves as the base rate. Trauma cases (in particular, assault) are codified as such and in a sub-group analysis may be suggestive of the extent of interpersonal violence burden and met/unmet need. **Secondary Outcomes:** Associations between Practitioner demographic factors, DV case detection and/or referral frequency and pattern; Associations between patient demographic and DV case detection and/or referral pattern
T	Timing	What were the time frames over which outcomes were assessed?	**Retrospective cohort:** Medical records completed by EC providers from the sampled EMS bases in the preceding year from start of data collection (July 2015-October 2015) **Prospective cohort:** training and medical records after screening implementation 3 months from start of ethics approval (July-October 2016)
T	What type of question are you asking? Type of study you want?	Diagnosis, Aetiology/Harm, Therapy, Prognosis or Prevention? What is the best study design & methodology?	Diagnosis, aetiology, Harm, Prevention? Does training and implementation of a DV screening tool improve DV case detection and referral? **Cohort Study** (retrospective/prospective)

3.2.6.2 Hypothesis of the Cohort Study

Phase I does not have hypotheses. In Phase II, the two hypotheses follow the research question, upon which they are based as hypotheses are testable predictions to the gap in the knowledge. The question is: *Does implementation of a screening tool by EC providers improve detection rate of victim exposure to DV and improved referral rate of female victims (14 years and older)*[39] *presenting to a public emergency medical service in the City of Cape Town and Cape Winelands?*

The hypothesis then is about detection rate improvement. The test would be dependent on the assumption that the underlying rate of DV in EMS cases is the same before and after implementation of the screening tool. This seems a reasonable hypothesis as the overall time frame is not large enough to expect a radical shift in DV incidence in society, and there is no reason to suspect that the implementation of the screening tool itself might affect the DV incidence in society. Having made this assumption, we define p1 as the proportion of EMS cases for which DV is detected before implementation of the screening tool, and p2 as the proportion of EMS cases for which DV is detected after implementation of the screening tool. Our null hypothesis is $p1 \geq p2$ (i.e. the proportion either remains the same or decreases), and our alternative hypothesis is $p1 < p2$ (the proportion increases).

A. Primary Outcomes

The two primary outcomes after the implementation of routine screening as compared to a historical base rate were:

- a change in the DV case detection rate
- a change in the DV case referral rate

B. Secondary Outcomes

Associations between practitioner and patient demographic factors, DV case detection and/or referral frequency and distribution pattern also emerged. Where the data allowed, associations between patient/practitioner interactions and DV case detection and/or referral distribution pattern were also documented.

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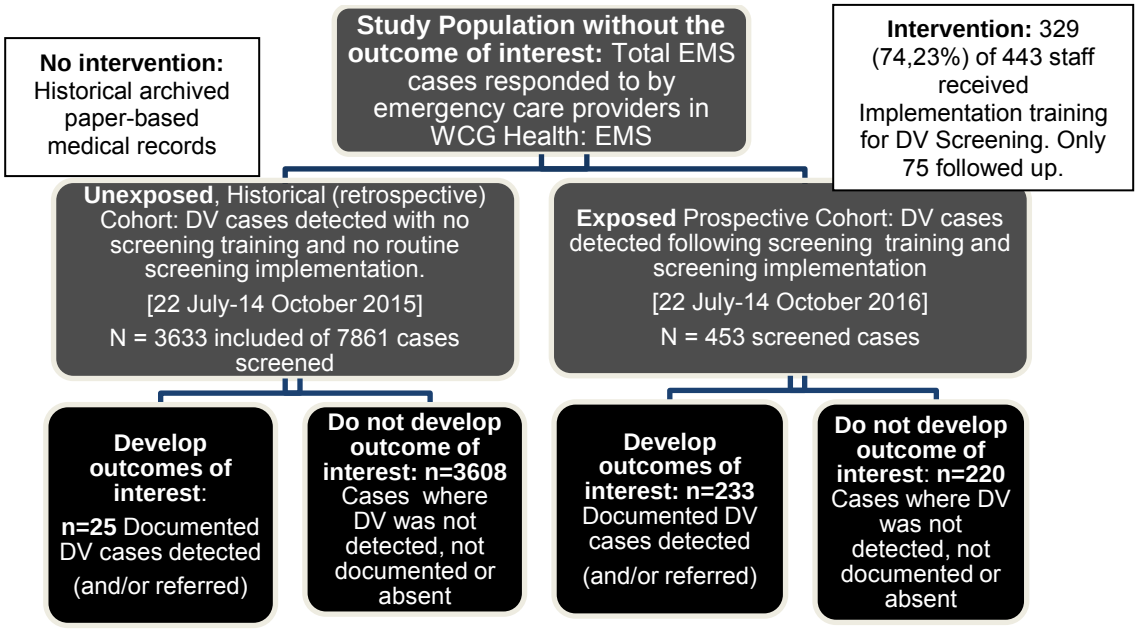
[39] The age is in reference to the HPCSA-approved routine screening policy and reproductive age. This does not preclude younger children from being screened selectively.

3.2.6.3 A retrospective cohort involving archived EMS patient report forms

The cohort design is represented graphically in Figure 10 below. The proposal was to retrospectively look at the female patient medical records in the randomly selected bases in the Cape Winelands and in the City of Cape Town and see if anything was documented about DV during July–October 2015. Records were obtained for the same bases as in the prospective cohort and comprised the retrospective cohort of the study.

Figure 10: Cohort design showing retrospective and prospective cohorts[40]



The ambulance staff use paper-based patient report forms (PRFs)[41]. These were used in the cohort study and were developed by the WCG: Health. They report on narrow measures of EMS efficiency related to transport times and general clinical information. They were not designed for DV reporting specifically. Notwithstanding, as a legal medical record, it provides the only prehospital medico-legal record of historical EMS cases. The completed

[40] Not adjusted for gender

[41] A standardised template for all emergency calls that is practitioner-discretion dependent for completion. It constitutes the only medical record of the EMS interaction with the patient.

PRFs are archived in order of day and base and (all female cases) needed to be sampled and data captured. Four research assistants were recruited in this regard. No patient identifiers were documented.

A. *Retrospective Sampling Strategy*

The choice between sampling strategies came down to logistics (feasibility) and ease of implementation. The WCG: EMS currently store patient report form (PRF) data in a paper-based archive system organized by operational shift (12-hour periods).

This archive is currently not stored in an indexed database or numbering system which would have allowed for simple random sampling techniques. The total number of cases (>40,000) presented a number too large to process within the resources and time available. It was considered logistically challenging to generate a random sample and keep the sample and the non-sample in the order of the archivist. A systematic sampling technique was implemented (as a trial at the start) where every fifth eligible case was set aside for inclusion. This made it relatively easy to put the sampled and not-sampled sheets back together in order when finished. Concerned about systematic bias, we could not rule out if there was a pattern in the ordering of the sheets that repeated every fifth PRF. Therefore, a one-stage clustered random sampling method was adopted instead. A cluster (primary sampling unit) was defined as a 12-hour shift; the secondary sampling unit is then an EMS case meeting the eligibility criteria (female and aged 14+). Shifts in the EMS are organized in 12-hour cycles of day (7am-7pm) and night shifts (7pm-7am). This one-stage clustered random sampling randomized an anticipated 170 clusters of 12 weeks (85 days) of 2015 PRFs. The aim was to choose a simple random sample of shifts from this population of 170, and then include *all* eligible EMS cases within the sampled shifts.

Using information collected through systematic sampling (as pilot data), it was possible to estimate the average cluster size (i.e. number of eligible and ineligible EMS cases per cluster). Based on figures available from the pilot data (470 cases eligible from 969 cases sampled), a Monte Carlo simulation[42] was conducted to determine the standard error[43] of

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[42] "Monte Carlo simulation is a computerized mathematical technique that allows people to account for risk in quantitative analysis and decision making…Monte Carlo simulation furnishes the decision-maker with a range of possible outcomes and the probabilities they will occur for any choice of action. It shows the extreme possibilities—the outcomes of going for broke and for the most

proportion estimates for different sample sizes (i.e. numbers of clusters sampled). It indicated that 30 clusters would be a sufficient sample for the desired power and precision.
The Monte Carlo simulation (Annexure 9) was repeated post data collection and operated under the assumption that there are a total of 170 clusters, and that the number of eligible cases per cluster was normally distributed with a mean = 110,26 and standard deviation 26,84. The standard deviation is simply the calculated standard deviation of the number of eligible cases in each of the 30 clusters. The mean number of eligible cases across the 30 clusters was 122,27. However, this appeared too high, because if multiplied by 170 it calculates to 20786, whereas the estimated number of total eligible cases was 18,744 (40,354 total cases x 0,4645 eligibility rate in 30 clustered samples = 18,744). Thus the mean number of eligible cases per cluster was calculated to be 18,744 / 170 = 110,26.

There are different approaches to sample size determination depending on one's objective: estimation or inference. The power approach focuses on the objective of inference, and asks what sample size is needed to achieve a specified level of power in a particular hypothesis test (with a given significance level [alpha] and effect size). The precision approach focuses on the objective of estimation, and asks what sample size is needed to achieve a specified level of precision, i.e. half-width of interval, in a confidence interval with a given level of confidence ([1-alpha]x100%).
The empirical results (by sampling 30 clusters) determined the estimated standard error for estimating a proportion whose true value is 0,01 using 30 clusters is 0,001720. This implies that a 95% confidence interval for such a proportion estimate has a half-width of about ±0,0033712. The simulation assumes the percentage to be estimated, to be 1%. The rate of return on precision per unit of sample size begins to decline at approximately 30 clusters which justifies stopping at 30 clusters. The simulation itself used 10 million iterations, so that its empirical findings are correct to within +/- 0,03% with 95% confidence. Note that the standard error and power estimates are approximate rather than exact and have a Monte

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conservative decision—along with all possible consequences for middle-of-the-road decisions." (Palisade, 2016)

[43] Standard error is a measure of the statistical accuracy of an estimate, equal to the standard deviation of the theoretical distribution of a large population of such estimates.

Carlo standard error of at most 0,000158 (calculated as $\sqrt{\frac{1}{4(10000000)}}$), indicating that all Monte Carlo results up to at least the third decimal place can be considered.

The Monte Carlo simulation thus projected the sample size at which the study would be sufficiently powered and have the desired precision to make the hypothesis test conclusion statistically significant and valid. The desired power was 80% and level of significance or alpha was at 5%. In the planning and data collection phase target sample was known and aimed for deductions could be made (if the projections held) from the end results with sufficient power (validity) and precision to find a significant difference between the cohorts.

To estimate proportion of cases where DV is mentioned there is an improvement as the sample size is increased but the rate of improvement tails off. Twenty clusters were considered too small and 30 clusters could be the acceptable minimum sample, but anything over 60 clusters would be wasteful in terms of cost and time invested. In terms of margin of error, 40 clusters were projected to provide 0,0028 (=0,28%) and with 50 clusters the margin of error was projected to be down to 0,0024 (=0,24%).

If the Monte Carlo projection held (and it did), then, through hypothesis testing, sufficient power and precision would be attained to find a statistical difference or no difference between the cohorts. This was verified by repeating the Monte Carlo simulation post data collection, the comprehensive results of which are discussed in 3.2.6.3.C. below.

B. Data Collection Procedure

The chain of custody was maintained by the researcher signing responsibility and custodianship for the documentation. Research assistants were duly appointed and briefed on the study and data collection. One stage cluster randomized sampling (CRS) was implemented. All included cases within a cluster were documented. Quality measures included daily logs of inclusions and exclusions and these were verified for every cluster. Spreadsheets were routinely saved and desktop computers were routinely updated for anti-virus protection.

Criteria for inclusion was all females, 14 years and older, with or without case detection for DV. Girls (younger than 14) and all boys/men where DV or any GBV documentation was identified were also included, to be commensurate with the prospective screening tool. The

initial screening was done in pairs and verified by each other. Once proficient, determined by a 0 selection error rate per cluster, the selection could be done individually with random quality audits. Screening error detection resulted in a re-implementation of a 'buddy system'. Erroneous selections detected at the time of data entry were excluded. This data was entered concurrently from the 1st August 2016 to 30th October 2016, whilst the prospective cohort forms were being collected.

Once the randomised clusters in order of the randomised list were identified, the cases (PRFs) within each cluster were categorised according to the selection criteria by the trained data collectors. Included cases were all female cases (14 years and older) irrespective of diagnosis and any other population group (male or female, of any age) where GBV from a known perpetrator was likely or indicated as such. All other cases constituted excluded cases. The eligible (included) PRFs were then used to derive information to populate an Excel® spreadsheet. The spreadsheet column headings resembled the identifiers (cues) on a PRF (Annexure 10), for easy recognition. When completed the PRF was returned to the cluster. Final numbers of included cases per cluster was verified against the excel entries per cluster to ensure no cases were omitted. One assistant and the researcher conducted quality checks for each cluster but on a random basis. Each entry was cleaned before the cluster data was added to the database. Where documents were illegible, a second opinion was sought. PRFs in Afrikaans were entered by first language Afrikaans assistants. Due to the fatigue-inducing nature of repetitive tasks and increased risk of human error, refreshments were readily available and scheduled and *ad hoc* breaks were taken.

C. *Cohort Study: Internal and external validity*

The cohort study screening tool was presented at the training intervention and the following concerns were addressed. External validity: the extent, to which the results of the study could reflect similar outcomes elsewhere and could be generalized to other populations or situations, may be judged in the statistical analysis of sampling and representivity. The

cohort design was internally valid as it emanated from Phase I[44]. The Monte Carlo simulation was performed to determine the projected sample size at which the study would be sufficiently powered and have the desired precision to make the hypothesis test conclusion statistically significant and valid. The desired power was 80% and level of significance or alpha was at 5%. In the planning and data collection phase we knew what target sample we were aiming for and could make the deductions (if the projections held) from the end results with sufficient power (validity) and precision to determine differences or no differences between the cohorts. Subsequent to the historical data collection process described, a *post facto* Monte Carlo simulation was repeated using the actual parameters to show validity.

Figure 11 shows how the standard error decreased as the number of clusters sampled increased. An “elbow” in the graph around n = 30 was observed, which shows that the rate of return on precision per unit of sample size begins to decline around this point. Considering only females, DV was diagnosed and reflected on the patient form in just 16 out of 3135 cases, a rate of 0,51%. We use the empirical standard error from the Monte Carlo simulation (0.001902), yielding an approximate 95% confidence interval for the detection rate between 0,138% and 0,883%. The convention in quantitative research is to use a sample size sufficient to ensure 80% power for a suitable choice of effect size. Since this study analyses small proportions, it is required that the data be sensitive to a small effect size. Hence, p0=0,015 is used as before however an effect size of 0,005 is adopted (Figure 12). This means that if the proportion of cases in which DV is detected drops from 1, 5% to 1% or increases from 1,5% to 2%, the sample should provide an 80% chance of identifying this change through a hypothesis test. As illustrated above, the power increases rapidly with sample size, and approximately 80% power is achieved at a sample size of 30 clusters. The exact estimate of power at this sample size is 0.7987.

[44] Table 13 (in 3.3.4.3 below) highlights some answers to questions that relate to contextual validity.

Figure 11: Sample Size versus (Monte Carlo) Empirical Standard Error Estimate

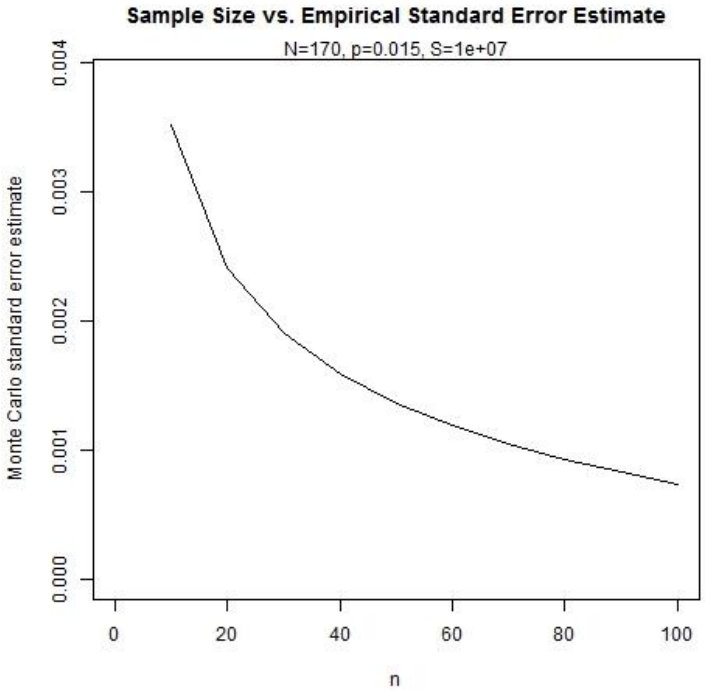
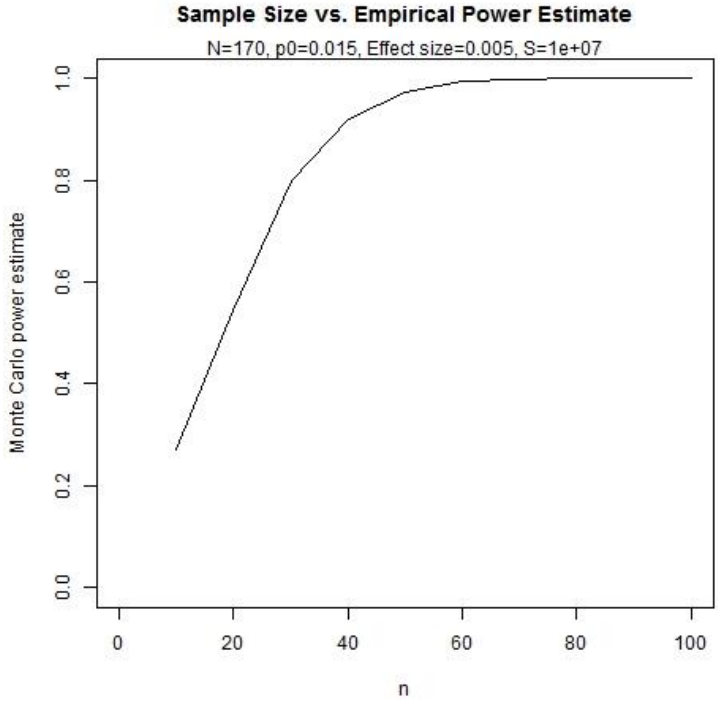


Figure 12: Sample Size versus Empirical Power Estimate



3.2.6.4 Prospective cohort

Of 14 bases, 5 operational bases in the WCG: EMS in the City of Cape Town and in the Cape Winelands was sampled using one-stage cluster random sampling. In the sampling design, bases were the primary sampling unit (PSU) and individual EC providers were the secondary sampling unit (SSU). One-stage cluster random sampling entailed that, having drawn a sample of operational bases (PSU's) using simple random sampling; all SSU's (EC providers) were recruited at each of the sampled bases. This was an effective method to ensure fairness in selection and logistical ease of access to archived data and staff for training.

Recruitment for the cohort study entailed an information session by the researcher to the strategic and operational management staff, including district trainers whose role it is to promote continuous professional development (CPD). Given the CPD nature of the DV workshop, staff was encouraged by their supervisor and district trainer to participate in the cohort study. All operational staff were afforded an equal opportunity to attend the workshops as multiple sessions per site were scheduled with due consideration for each shift roster. So as not to inconvenience participants, the workshops were held at their place of work. Notwithstanding the obvious CPD points to be gained, participation was voluntary and there were no reprisals for non-participation. The desired 100% participation rate at each sampled base was not achieved as some refused to or could not participate (n = 329 [74,23%] participated in the workshops of an estimated staff complement of 443 [N] from the sampled sites). The researcher was responsible for facilitating all 12 workshops, in the interest of consistency.

All cohort study participants recruited after an information session at their place of work, underwent a 1-day training workshop on DV pathology and medico-legal implications, DV screening and referral and reporting guidelines (Annexure 1). General training outcomes were constructively aligned to the approved screening tool. At the end of the 7-hour workshop (plus 3 notional hours), the prehospital EC provider should have had the following general outcomes:

A. Training intervention objectives/outcomes[45]

The workshop curriculum included: key concepts, guiding principles, screening guidelines, collection of forensic evidence and key concepts in clinical management:

a) Understand key concepts in GBV and the role of EC.
    - What defines DV? What is the global and site specific burden of DV?
b) Understand guiding principles for helping victims of GBV and the protection of human rights.
    - What is the role of EC as an entry point and sometimes *only* point of contact?
    - What is the role of EC in public health, violence prevention, and as a community health resource? What is the EC role in preventing the recurrence of violence? Legal mandates and responsibilities?
    - Understand the interdisciplinary and integrated approach to DV and the role of EC.
c) Understand how GBV may present in the prehospital setting.
d) Be able to implement a DV screening tool on a routine and universal basis.
e) Be able to manage all prehospital relevant aspects of GBV patient care, including: Physical injury, Psycho-social concerns, Collecting forensic evidence and documentation.
f) Be able to refer and connect victims of GBV to local resources to help ensure their future safety and empowerment.

Guiding curriculum principles included:

a) Survivor-centred principles: the victims'/survivors' rights and needs are first and foremost.
    - Right to privacy
    - Right to confidentiality
    - Right to choose/autonomy

[45] These outcomes are the result of engagement with Dr Jennifer Newberry (Co-Medical Director: Peninsula Family Advocacy Programme) and Prof SV Mahadevan (Stanford University Medical Centre, Emergency Medicine International), in the interest of developing training materials for dissemination of this study findings. They align with the participants expressed clinical needs expressed in Phase I.

- Equity and non-discrimination
- Right to dignity
- Ensure Accessibility
- Assess and manage safety
- Non-maleficence (Do no harm)
- Promote effectiveness

b) Protect and promote human rights
    - Global (Universal)
    - Local enactment (constitutional/ provincial/ regulatory)
    - Quality of care: What is the duty as EC providers?

Observation units were EMS cases from the prospective cohort period (22 July-14 October 2016) for which the participating EC workers voluntarily completed and returned the DV screening instrument. DV detection vs. non-detection was a variable of interest. It should be noted that the cases themselves do not represent a random sample from the population of all EMS cases attended by EC workers from those bases during the study period. This is because of the volunteerism element in the participating EC workers. Their decision whether or not to complete and return the screening instrument for a particular case may plausibly be related to whether or not DV was detected in that case and is therefore a source of selection bias. It is for this reason that a conservative estimate was used for the DV detection rate by dividing by the estimated total number of cases seen by the 75 participants who returned forms, rather than dividing by the number of cases for which forms were actually returned (Figure 10).

Participants were practicing EC providers who screened for DV during history taking and diagnosis. The screening tool is approved by the HPCSA (Annexure 1). The data collection instrument was completed and submitted to the researcher via the base manager. In prospective cohorts, maintaining follow-up is usually difficult and susceptible to loss to follow-up or withdrawals. This limitation, as well as the narrow time frame of the study, precluded a cross-sectional cohort study. A retrospective/prospective study was most time-efficient. Advantages of the cohort design are that in gathering data regarding sequence of events, probable causality may be assessed. Multiple outcomes for a given exposure may be assessed and whilst it may be good for investigating rare exposures, large numbers are

then needed. Susceptibility to selection bias is inherent in the voluntary nature of the participation. Ordinarily, in cohort studies rates of disease in exposed and unexposed individuals can be calculated over time (e.g. incidence, relative risk).

Subsequently, the prospective case detection and referral rates were compared to historical detection and referral rates amongst all cases (associated with interpersonal violence/trauma or not), obtained from medical records sampled from the same bases over a similar three-month period in the preceding year (22 July-14 October 2015). *A priori* knowledge is that routine screening for DV was not implemented in the retrospective cohort and hence screening, reporting and referral rates are expected to be low. Recall bias is not a consideration as the retrospective cohort is historical paper-based medical records. However, there is less control over variables. Susceptibility to information bias is probable, given the preliminary finding of resuscitation bias.

B. Prospective Cohort Sampling Strategy

Phase II was implemented in mid-2016 only in the WCG: EMS until October 2016. The survey was implemented in the same sites as the cohort study implementation sites. The sample population was all self-selected participants of the cohort study population from a staff complement of 443 staff across all qualifications (Annexure 6). The survey would document the preceding knowledge of those enrolled in the cohort study.

The staff population in all the sites (n=14) in both selected municipalities (Cape Winelands and City of Cape Town) was 768 (N), amongst a provincial EMS population of approximately 1362. For the survey and cohort study, a one-stage clustered random sampling methodology was used. The first stage consisted of sampling five operational bases from a base population of fourteen (Table 11). This was achieved using stratified random sampling, with the strata being rural (8), peri-urban (2) and urban (4) bases. The sample sizes per stratum were 2, 1 and 2, respectively. Selection of base(s) within each stratum was done using probability sampling, with probability weights proportional to the number of operational ambulances at each base. In the 'second' stage, we simply involved all staff at each of the chosen bases (subject to their availability and willingness to participate). The randomly chosen bases (initially) were: Ceres and Robertson (rural), Paarl (peri-urban), Pinelands and Khayelitsha (urban).

Table 11: Sampling frame for the survey and cohort study sites (bases)

Cape Winelands (Rural)	Operational Staff (n)	Ambulances (n)
****Worcester**	**45**	**5**
Robertson	16	3
Bonnivale	8	2
Montagu	8	3
Touwsriver	6	2
De Doorns	18	2
****Ceres**	**36**	**5**
Tulbagh	8	2
City of Cape Town (Urban)	**Operational Staff (n)**	**Ambulances (n)**
Tygerberg	153	24
Mitchells Plain	153	24
****Pinelands/ DuNoon**	**221**	**36**
****Khayelitsha**	**186**	**20**
Peri-urban Bases	**Operational Staff (n)**	**Ambulances (n)**
****Paarl**	**41**	**7**
Stellenbosch	36	5
Communications Centres	**Call takers (n)**	**Shifts (n)**
****Cape Winelands**	**12**	**4**
****City of Cape Town**	**28**	**4**

Key: ** Sampled Sites for data collection. (By courtesy of WCG: Health: EMS (2016)

To confirm organizational support for the study at a base level, each base was visited by the researcher and base management was briefed about the project. It emerged that Robertson was not available as a study site and the next choice, Worcester was selected. These represent a total of 73 operational ambulances and 498 staff[46], who collectively respond to 21,343 calls on average, per month (Table 11). As there was one communications centre in each district, both district communication centres were selected as they linked the EC provider with the community. In the retrospective cohort, medical records of female patients (14 years and older) presenting to the EMS were sampled. Documented cases of abuse of any males or younger females were included.

[46] This estimate was established to be 443 (N)

C. *Prospective Data Collection Instrumentation and Procedure*

For prospective reporting of DV cases, participants were required to complete a DV Screening Implementation report (Annexure 11). This was essentially a checklist that was developed from the DV Screening Protocol (Annexure 1). It sought to document the demographic information of the patient, practitioner and alleged perpetrator, screening finding, safety assessment index, referral choices, and a Likert scale of preparedness for screening, to the extent that the PRF (Annexure 10) did not. This instrument, as a screening tool was demonstrated in the training session that preceded the screening implementation. Posters promoting the screening inclusion criteria were posted at each participating base and managers were briefed to remind staff of the screening protocol at the start of each shift when blank screening forms was disseminated amongst participants.

This data was the result of the implementation of the HPCSA DV screening protocol. Those EC providers that attended the intervention workshop would, at the start of a shift, take some blank DV screening forms and complete them routinely, for *every* EMS case where the patient was a female 14 years and older. They would also complete the screening form, selectively, for any other population presenting with a high index of suspicion for a GBV-related complaint. Confidentiality and a risk assessment were paramount. The process was to enquire, during routine history taking, about the presence (if any) of physical, sexual or psychological abuses (notwithstanding the presence or absence of signs and symptoms of abuse. Documenting the case meant completing the DV screening form by a series of ticks/crosses and some explanations where likely. The completed form was placed in a marked box at the site or handed, at the end of shift, to the shift officer or College of Emergency Care (COEC) representative who sent them to me in weekly batches. They were then entered into an Excel® spreadsheet by two appointed data collectors. The retrospective and prospective data were entered concurrently on different spreadsheets.

D. *Cohort Study Data Processing and Analysis*

The cohort study, as an epidemiological study, uses a 2 x 2 table (Table 12) for calculations (Joubert, et al., 2010). Follow up on individual patients is not possible due to pragmatic considerations of time, traceability of abode and limited resources. Absolute or relative risk

reduction calculations were not study outcomes. Knowing what the base rate of documented detection and documented referral rates were historically was anticipated. All PRFs from 22 July to 14 October 2015 (amounting to 40,354 cases) was boxed according to day, shift and base by the archivist responsible.

Table 12: Cohort study calculations

Step 1: Divide study population into exposed and unexposed	**Step 2: Follow subjects through time to see if outcome develops**			
Domestic Violence case detection and referral	Documented DV detection rate over 6 months (Historical:12 weeks & prospective: 12 weeks)		**Totals**	**Step 3: Calculate incidence of outcome in two groups and compare**
	DV detected	DV not detected		
No screening training and implementation	a	b	a + b	?
Screening training and Implementation	c	d	c + d	?
Total	**a+c**	**b+d**	**a+b+ c+d**	

Retrospective data collection was enabled by mark up of a copy of a blank PRF (Annexure 10) indicating/circling where each value is to be found, since there are a lot of fields on the form that did not need to be captured and data capturers may struggle to find the right place. A key issue with the retrospective data is whether there's *any indication* of DV screening, besides overt notations. Places on the PRF where an EC provider might conceivably indicate this, e.g. 'Other Actions' under Management were also captured. The key for the spreadsheet was comprehensive and unambiguous.

For the prospective cohort, a data collection instrument was provided for when participants detect a DV case (and refer) or not. The only data around the primary outcomes are rates before and after screening training and implementation-differences which was compared using standard methods (t-test if parametric using t-distribution; chi square if non-parametric). These remain novel and of interest as these outcomes are undocumented for South African EMS. In the reporting template, for questions that allow participants to tick

multiple answers on the form, a column for each possible answer exists. Capturing data as e.g. 1,2,4,6 in one column would result in poor data analysis. Rather, a column was added for each of 'New admission of abuse to health care', 'Provided information', 'Supported patient', etc. and the data capturer could assign the code (e.g. 1) in that column if it is ticked, or leave it blank. The Pearson chi-squared test for independence was used to investigate the relationship between two categorical variables. A Wald chi-squared test tested the statistical significance of the individual parameter estimates in a logistic regression model.

3.3 Ethical Considerations

During recruitment the procedures for the protection of human participants were stated. Care was taken to ensure that the participants fully understood the nature of the study and that participation was voluntary. Confidentiality of data was maintained at all times, and identification of participants was not available during or after the study, except where indicated. As a study involving human subjects, this study is compliant with the terms and conditions of the National Health Research Ethics Council (National Department of Health, 2015). The study was deemed to be one of minimal risk to participants. The probability and magnitude of harm or discomfort anticipated in the research was not greater than any ordinarily encountered in daily life, or during the performance of routine EC work.

3.3.1 Institutional Approval

As a Health Faculty study, University of Cape Town (UCT) institutional ethics approval (including renewals and amendment) was obtained from the Human Research Ethics Committee (Annexure 12; Reference number: 141/2012). Site approvals from the employer of any participant or the relevant case in the study were sought (Annexure 13) before any data collection occurred (such as KZN DOH, WCG, DUT, CPUT and HPCSA PBEC). Particular approval was sought for the consideration of PBEC documents (Annexure 14). Individual participants also received information sheets to facilitate informed consent (Annexures 15-19).

3.3.2 Informed Consent

Due regard was had for confidentiality of patients and practitioners. Autonomy of professional practice was respected and HPCSA ethical rules apply in conjunction with those of UCT. Informed consent of participants was attained from the participants in the questionnaire, FGD and from the 'actors' in the POs, notwithstanding the potential for the Hawthorne effect. Consent was gained from the organizations concerned and to reciprocate, through dissemination, feedback to participants and organizations will be provided upon completion. Annexures 15-19 relate to informed consent.

3.3.3 Potential for Harm (risk versus benefit)

For the duration of the study, access to trauma and professional development counselling (by a HPCSA-registered psychologist) was available (but remained unused) as there was potential to cause harm by the altering of self-perceptions or through secondary trauma from retelling of experiences. Principles of autonomy, beneficence and non-maleficence were respected. At no time was non-HPCSA approved conduct required, so there was no risk to professional good standing.

The benefits anticipated from the study included an improved understanding of the nature of emergency medical systems, a critical appraisal of violence intervention, professionalization of EMS responses to GBV, realising ethical obligations of EC providers and perhaps improved resource utilization. The risk of group harm to EC providers exists with regard to their responsiveness to GBV victims. The study motive was to mitigate this in the interest of defining role and scope of violence intervention. The benefit of professional growth, improved self-efficacy and diagnostic and therapeutic relevance in GBV cases suggests benefit over risk. There is inherent risk in doing nothing, which makes practitioners ethically complicit, by omission.

3.3.4 Specific Cohort study Considerations

3.3.4.1 Respect for Autonomy

While Phase I considers what is possible and likely to work, Phase II actually implements such an intervention and evaluates the possibility of causal links. The cohort design is more

directly suited to the study question. Data collection sites were randomised to ensure fairness in selection. Confidentiality and anonymity of the patient medical records or call taker records are assured as no patient or practitioner identifiers are recorded for the study. Confidentiality about practitioner participation is not assured as the screening is routine and colleagues not enrolled in the study may be aware of participation due to the team dynamic in the EMS, or from jointly attending the intervention training. Participants understood the dangers of violating confidentiality and were provided an information booklet on rights and services available (Women's Legal Centre, 2014) to victims screened and to those denying the presence of violence in the event of false negative cases. This was intended to dispel the false belief that EMS is the only point of care.

The risks to the practitioners included a lack of cooperation from the victims who wish to openly protect the abuser and accuse the practitioner, possibly as a show of loyalty to the perpetrator (possibly borne out of fear and mistrust). The training prepared participants to mitigate this risk. Where risk of physical harm might have existed, standard EMS operational procedures were to be implemented. Where there was emotional affect, referral to an accredited EMS counsellor was available. There were none to report. Victims themselves could have been at risk of secondary victimisation or risk of abuse from participants who ‘prey’ on vulnerable women or deliberately abuse their trust. This risk predates the study. The second crew member and the identities of the staff mitigate this risk. Participants are themselves HPCSA registered and are obligated to conduct themselves ethically at all times.

3.3.4.2 Research Assistants and Data Handling

Research assistants underwent training in data collection and research ethics, as they applied to this study. Confidentiality agreements were in place (Annexure 20). Some assistants (such as base managers/shift leaders) were already registered with the HPCSA and as such, are obligated to respect ethical rules and to conduct themselves professionally. The four data collection assistants (final-year Mathematics Technology undergraduate students at CPUT) were trained in data quality and management (one of them holds a Diploma in Statistics). All research assistants were under the direct supervision of the researcher.

All data sampled from the EMS archive was retrieved with permission and returned to the satisfaction of the curator. Initially held in a secure venue at CPUT, Department of Emergency Medical Sciences, the PRFs were relocated to the WCG, COEC following threats of arson during protracted student protest action. Call taking data and PRF data was anonymised (no patient identifiers) as they only revealed incidences/ frequencies of DV detection. Electronic data was password protected and stored on a dedicated hard drive.

3.3.4.3 Screening Intervention

Only trained participants were allowed to screen for DV. The training prioritises patient autonomy and respect for persons. Participants underwent informed consent procedures and suffered no loss or reprisals if they chose to leave the study. The screening tool is HPCSA approved and the training was HPCSA Continuous Professional Development (CPD) accredited. As such, participants gained continuous education units (CEU's) in accordance with the HPCSA CPD policy. There was no remuneration for the training, and therefore no undue inducement. Notwithstanding that the screening protocol is HPCSA approved, Joubert et al. (2010) presents seven pertinent questions that have ethical dimensions, to justify a research screening programme (Table 13).

Potential for risk is reduced by a short period of implementation, communication centre involvement in terms of managing risk and reporting processes for adverse events. The data parameters are presented in Annexures 10 and 11. The implementation of a DV screening tool is found, in the research, to be safe and improves case detection. The WHO has not reported on any enhanced practitioner risk in screening for violence amongst victims (World Health Organisation, 2013b). In fact it is reported that a nuanced form of screening: multi-agency victim identification protocols, improves safety of practitioners when working with perpetrators. In addition to attention to hypoxia, shock and administration of treatment appropriate to the patient's presenting complaints, EMS personnel are in a unique position to identify problems associated with violence.

Table 13: Questions for screening implementation

Questions	Responses
Is this an important public health problem?	Yes, mortality and morbidity studies confirm this. (Norman, et al., 2010; Abrahams, et al., 2013)
Do we know the natural history of the disease, with and without treatment?	Yes. DV is serial in nature and the violence frequency and severity escalates over time. No treatment results in poor quality of life, high stress states and premature unnatural death.
Is there an effective treatment?	Yes. Apart from the biomedical care, victim empowerment programmes enable women to reclaim their power and agency. In emergencies, removal from the scene or police presence may diffuse violence.
Is the screening test valid and reliable?	The test emanated from other validated tools and is HPCSA approved. (Martin & Jacobs, 2003)
Is there capacity to confirm and treat everyone diagnosed?	The EC provider was trained to screen, assess risk and respond in accordance to needs. The in-hospital capacity to respond was unknown as routine screening for DV in the prehospital milieu is unprecedented. Therefore, the study spanned 3 months and appraised referral patterns. A resource network from the Women's Legal Centre was provided for the consumption of practitioners and patients. Male DV cases would only be selectively screened due to the study limitations.
Is there good evidence that such screening programmes have been effective?	Yes. Direct evidence emanating from the preliminary findings has been published and a Cochrane review supports the screening intervention (Stachera, Taylor, & Konkin, Breaking the silence: Should health workers ask about domestic violence?, 2016; Naidoo, Artz, Martin, & Zalgoanker, 2014; O'Doherty, et al., Screening women for intimate partner violence in healthcare settings: abridged Cochrane systematic review and meta-analysis, 2015).
Will the programme be effective and cost-effective compared to other priorities?	Yes, particularly for the prehospital setting as the only cost lies in the training expenses. Increased referrals, however, may have provided an increased burden to the receiving facility.

Prehospital EC is an uncontrolled environment in which any potential risk to practitioners is likely to be outweighed by the benefit of screening to the victim. In the event that victims perceive the practitioner as intrusive and becomes defensive, patient autonomy would be respected. Practice guidelines in the UK suggest the practitioner risk lies in misdiagnosing patient needs but that this risk is particular to those who have not been trained (National Institute for Health and Care Excellence, 2014). The rationale for responding to abuse follows. There is no evidence to suggest that South African victims expect differently.

> People experiencing domestic violence or abuse should expect staff to respond consistently and appropriately. Training staff to respond to disclosure (level 1) and how to ask about domestic violence and abuse (level 2) is essential for safe enquiry about experiences of domestic violence and abuse and a consistent and appropriate response. People experiencing domestic violence or abuse should be questioned sensitively and responded to with empathy and understanding. Private discussion with trained staff should allow assessment of the person's immediate safety in order to prevent further incidents. (National Institute for Health and Care Excellence, 2016)

Medscape (2016) strongly proposes that training be coupled with attitudinal change that supports good surveillance. Attitudinal change may however be a limitation of the study. “EMS personnel are the only health professionals who enter the environment where victimization occurs and are thus more likely to see evidence of domestic and sexual violence than the emergency department clinicians.” (Medscape, 2016) This is particularly so when the chief complaint is indirectly related to abuse. Thus, EMS personnel may detect abuse and violence that might otherwise go unreported. “Victims of domestic violence frequently refuse ambulance transport, thereby avoiding medical care in the [Emergency Department]. In such situations, EMS personnel are the only health professionals in a position to recognize domestic violence and make suggestions for appropriate intervention.” (Medscape, 2016).

Screening is a fundamental epidemiological principle to improve case detection (Joubert, et al., 2010). There is a plethora of screening instruments for clinical/healthcare settings, all of which do not highlight any increased risk to health practitioners in general (Basile, Hertz, & Back, 2007). The screening tool implemented in this study is approved by the HPCSA on the premise that EC providers have a duty to promote the safety of patients (Health Professions Act 56, 1974). The risk of screening implementation to practitioners is no more than current risk, as the screening is included in the routine history taking. The tool emanates from universal screening guidelines: the recommendations of The Consortium on Violence Against Women, comprised of higher education and civil society organisations (Martin and Jacobs, 2003). To respond to the risk of missed cases of DV, an information sheet was provided to improve access to services for DV prevention and management (Women's Legal Centre, 2014).

3.3.4.4 Mandatory Reporting of Child Abuse

The participants may have encountered children who have been abused. Having considered the legal obligations to report abuse (Hendricks, 2014) the researcher undertook to refer cases of child abuse to the WCG: EMS directorate for reporting, in the interest of the child. Section 110 of the Children's Amendment Act (Act 41 of 2007) provides details of the right to protection that children are afforded in terms of section 28 of the Constitution (Act 108 of 1996). This section compels certain professional sectors to report any form of child abuse, neglect or maltreatment that is suspected on reasonable grounds to a child protection organisation, the provincial department of social development or a police official.

If the reporting is done in good faith and substantiated to the relevant authorities, the professionals responsible will not be held liable to civil claims as a result of their reporting. In addition, section 54 of the Sexual Offences and Related Matters Act (Act 32 of 2007) compels '[a] person' who knows or who has a 'reasonable belief or suspicion' of any form of sexual abuse against a child or mentally challenged individual to report it to a police official. If such reporting is done in good faith, in terms of section 54(2)(c), the person reporting cannot be held liable in criminal or civil proceedings.

Whilst the letter of Section 110 of the Children's Amendment Act does not specifically mandate EC providers to report when they suspect that a child has been abused 'in a manner causing physical injury, sexually abused or deliberately neglected', the spirit of the law does. Ordinary citizens are given the discretion to report abuse but are not compelled to do so in terms of section 110. The Sexual Offences Act, however, compels all citizens who are aware of the sexual exploitation of children to report the offence to the police. Section 110(1) of the Children's Amendment Act stipulates that suspected child abuse must be reported to child protection organisations, the provincial department of social development or the police. Section 110 of the Children's Amendment Act implies that reporting of the suspicion of abuse must be done as soon as the suspicion is formed on reasonable grounds. The purpose of reporting is to ensure the safety and protection of the child concerned.

3.4 Study Limitations

There were no random or systematic errors to declare. In particular, measurement error was prevented by using critical appraisal tools that have previously been tested (Naidoo, 2007) and validated (Naidoo & Christopher, 2009; National Collaborating Centre for Methods and Tools, 2011). The findings validate the claim of internal validity since a highly specific hierarchy of evidence has been obtained upon which to base policy and practice.

Common qualitative research disadvantages such as: researcher subjectivity and bias, time consuming and costly research activity and poor statistical generalisability is acknowledged (Skinner, 2010). However, whilst researcher subjectivity and bias, may be limiting in the analysis of data, this is only so in the absence of constant reflexivity and judgmental rationality required of the methodology. The researcher is (in Phase 1) an instrument of the study as well. The extent of this reflexivity is limited by the researcher's neophyte status as a qualitative researcher. The process of transcribing and analysing data was time consuming and costly. The budget was planned with mechanisms for accountability and the study was supported financially by a higher education institution.

Care was taken not to generalize the findings of Phase I owing to the small sample size and the non-random sampling technique. Thus generalisation to a population is not an intended output of Phase I. Rather, description of phenomena and generalization toward theoretical propositions or analytical generalisability was desirable; hence, purposive theoretical sampling was employed. An additional limitation is that the findings, as descriptions of situations and interactions, may be beyond the researcher's and the reader's experience. The use of coding and triangulation of methods are likely to address this limitation. Further, the quantitative component of Phase II provides a direct clinical intervention in the field and empirically explores the qualitative Phase I findings. The limitations of time were addressed by imposing a 12-week data collection period and using an historical cohort that could be sampled concurrently with the prospective cohort.

3.5 Summary

The paradigmatic lens is that of critical theory. The need to use both qualitative and quantitative methods invokes the pragmatism of mixed-methods: As sequential exploratory mixed methods research design with a qualitative approach first (Phase 1) and an equal emphasis between qualitative and later quantitative, Phase 2 components. The qualitative methods of Phase I generate findings through purposive sampling and inductive reasoning. EiDM and content analysis nuances the inductive approach toward a qualitative descriptive study. A survey and cohort study constitutes Phase II. A one-stage clustered random sampling methodology was used for both.

EiDM was validated for public health research (National Collaborating Centre for Methods and Tools, 2011) and the survey was piloted. The PRFs sampled were original medico-legal records. The screening intervention in the cohort study involved training with international benchmarks, was HPCSA approved and locally and internationally validated. The sampling for the cohort study was guided and later validated by Monte Carlo simulations as having sufficient power (>80%) and precision. As Phase II was an amendment to the initial design, ethics clearance was sought for major amendment and approved. There were no reports of ethical breach or concerns for the duration of the study.

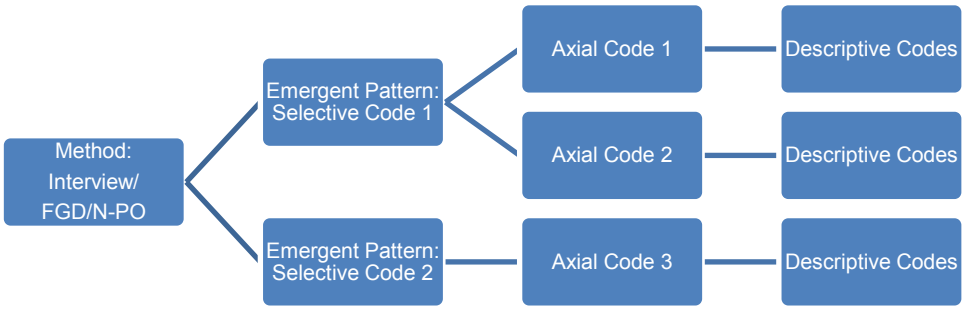
Chapter Four presents the 'thick descriptions' with varying levels of abstraction and qualitative analysis emerging from the different data collection techniques of Phase I and is followed in Chapter Five by the quantitative results and statistical analysis of Phase II. Each data collection opportunity represents a new 'case' for inductive or deductive analysis, given their different participation, setting, location, experience, qualification profile, employer organisation and organisational culture.

4 CHAPTER 4: PHASE I QUALITATIVE RESULTS

4.1 Introduction[47]

Data collection methods ran sequentially (the EiDM synthesis and pilot survey preceded others) until data repetition and saturation was achieved. Interview and pilot survey data reflected on the non-participant observation (N-PO) data and built perspective on issues relating to the presence or absence of DV screening and intervention from education, management and clinical perspectives. Focus group discussions (FGDs) served to highlight individual differences in opinion and some consensus positions consonant with the N-PO with respect to the EMS components of education, management and clinical care.

Figure 13: Convergence of codes/themes



To demonstrate the hierarchy of codes, Figure 13 shows how open/descriptive codes or constructs lifted from the transcriptions converge to form axial codes and related axial codes may converge toward selective codes in the form of an emergent pattern. Whereas descriptive codes are basic constructs of a phenomena occurring at any time in the data collection, axial codes are interpretive and may create categories and in turn, patterns/themes. The mind-maps presented in this chapter are a transparent way of identifying the method concerned, patterns/themes arrived at and the axial and descriptive

[47] The different qualitative data collection instruments, duration, participants, and purpose is summarised Table 7 (3.2).

codes derived from the data. It is important to note that axial and descriptive codes were generated for all data collected in a qualitative method, but selective codes only emerged after all axial codes of all transcripts in a method were considered (for example, 4 FGDs derived *4 sets* of axial codes, but converged to only *one set* of selective codes.) The interview results are followed by the FGD results and the N-PO.

4.2 Key Informant Interviews

The content analysis of the interview data is presented below. Three senior leaders[48] were invited to voluntarily participate in face-to-face interviews (named Participant 1, 2, and 3). They were most directly responsible for the strategic and administrative direction of the Professional Board for Emergency Care (PBEC). The themes (Conceptions of DV Health Burden and Risk of Regulatory Capture in EC) emerged from several readings of the transcript, first in chronological order and then by intersection/overlap of ideas, values or sentiment. Interviews with 4 EMS managers preceded those with the HPCSA to provide a 'bottom-up' perspective or operational context. The summary is presented first, with the 2 selective codes or emergent themes following (4.2.2 and 4.2.3).

4.2.1 Summary: Interviews with HPCSA Key Informants

'Conceptions of the DV health burden' was a selective code. EMS ideology on social determinants of violence, engendered and reactive organisational responses and EMS regulatory imperatives[49] for DV responses are the major emergent themes from the interviews with these power-brokers (as seen in Figure 14).

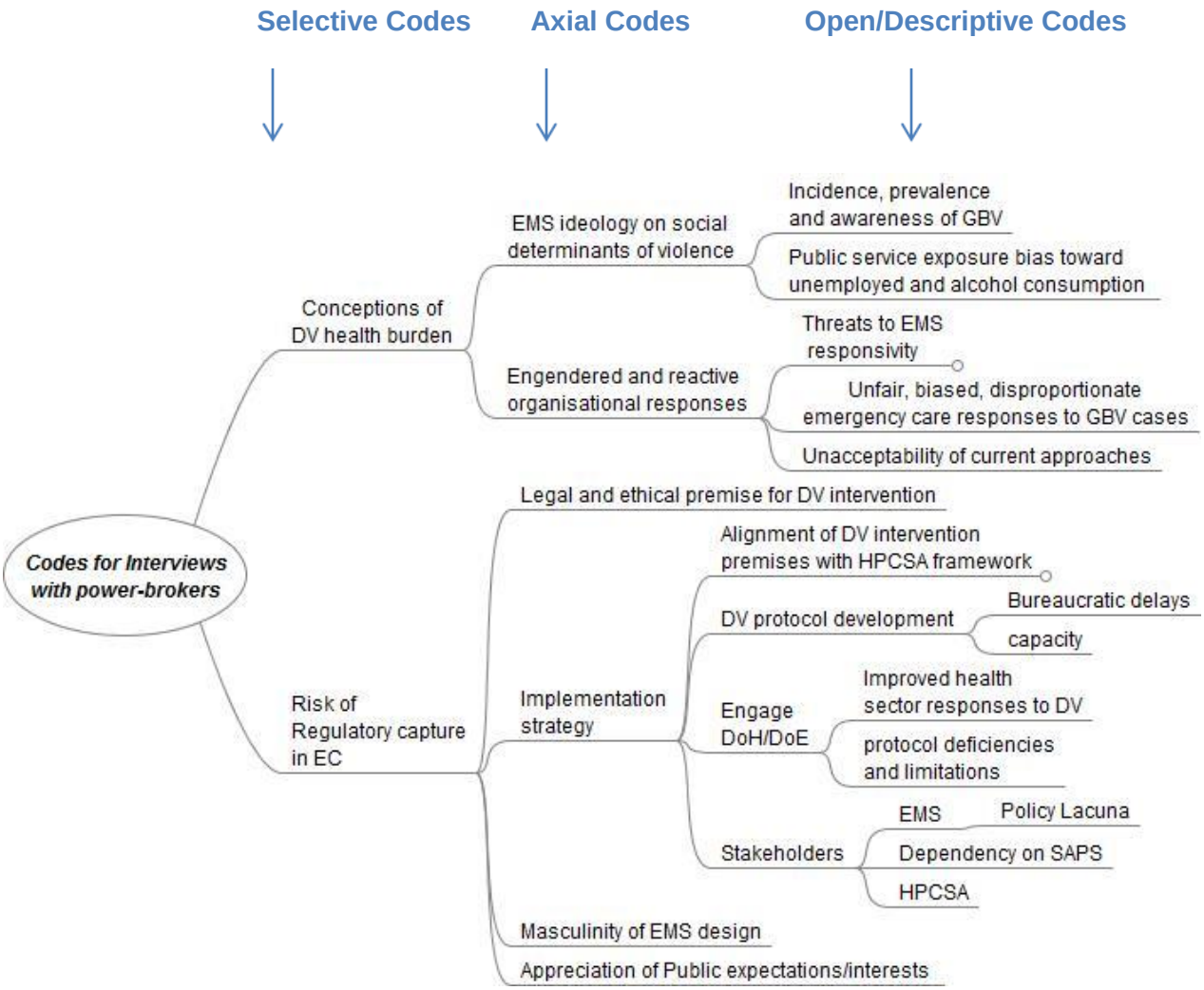
The participants were competent to speak to issues relating to EC regulation with varying levels of agreement or analysis. The health burden of DV was conceptualised as urgent and critical yet EC and health responses were spoken of as disproportionate in scope and pace. This leads to organisational and ideological incoherence. That it occurs at the level of the regulator implies an incoherence of considerable magnitude. The HPCSA capacity to achieve DV prevention goals and the avoidance of unnecessary delays in policy

[48] They also referred to as power-brokers, participants, or key informants.

[49] Imperative: Extremely important or urgent

establishment is predicated on EC ideology on social determinants of violence and critical reflection on engendered and reactive organizational reactions. The regulatory imperatives, challenges and opportunities for improved health sector responses to DV, were also spoken of. The claim that DV responses are “a priority in our country” deserves more credence and expression, both in institutional policy and in professional practice.

Figure 14: Codes for Power-broker Interviews



The power-broker interviews with managers from and EMS organisation and from the HPCSA revealed a macro-level analysis (Figure 14). From the regulatory representatives to the EMS organisation manager, ‘The DV health burden is poorly conceived’ emerged as a

selective code. This manifests in 'engendered and reactive organisational responses' and narrow ideology on 'social determinants of violence' (axial codes/categories). 'The risk of regulatory capture in EC' (selective code) is told by 'the masculine EMS design and culture', 'the hidden legal and ethical premise for DV intervention', the absence of a national EMS DV implementation strategy' and 'an undermining of the public interest' (all axial codes). This does not bode well for the prospect of DV intervention implementation, unless these areas are improved upon to the extent that they are no longer barriers to DV interventions.

4.2.2 Emergent Theme: Conceptions of DV Health Burden

4.2.2.1 EMS ideology on Social Determinants of Violence

DV is not amongst the 'core working areas' and is not championed by EMS managers. Despite the DV potential to contribute to EMS professionalization, complacency and missed opportunity prevails in the EMS.

> I don't think that EMS managers are strategically applying their minds to these sorts of issues…I think that most EMS managers are just focused on operational delivery and what the key deliverables are within the core working areas. The reality is that domestic violence is an issue which adds to professionalization of the healthcare worker…like awareness of HIV and Aids, and like other sensitivity to children's needs and children's rights. We just take all of that for granted; we don't focus on those things.

The prevailing EMS perspective is that DV intervention is someone else's business. The alternate position is that DV intervention is not historically seen as the legitimate work or core business of EMS personnel. The EMS implication is that doing only that which is minimally required (to satisfy narrowly defined health/EC needs) is unlikely to foster professional growth in EMS. Further, if the premise that DV intervention is someone else's responsibility is faulty, then non-action by EMS organisations constitute missed health promotion and intervention opportunities and DV victims and survivors are left unsupported. The EC profession was positioned as an emerging profession in need of critical self-reflection. The Participant alluded to the deliberate association of emergency presentations with upstream causes. In addition, he called for a rethink of the philosophical underpinnings of EMS education and practice.

As reported, no particular theoretical orientation/educational paradigm is advocated. The absence of theoretical orientations in the regulation of EMS education is of concern as there is little else to scientifically guide what is theoretically possible. Notwithstanding the

absence of measured outcomes, the impact on EMS practice is predictable on the basis of the "reactive" orientation of EMS education. The default theoretical approach appears to be a narrow skills-centered approach rather than a patient-centered, primary health care or rights-based approach.

The 'framework' guiding decision-making around major issues like protocols or changes in strategic direction at the PBEC was "…deliberation, discussion, consideration" (Participant 2). The decision making is therefore contingent upon the critical reasoning and argumentation skill set of the board members. All agreed that DV, as a health problem, is relevant to EC…

> …the very first person to arrive on scene is the emergency care worker where no other professional gets to it. It [DV] is very relevant to emergency care. (Participant 3)

Participants expressed professional exposure to GBV, collectively noting the underestimation of sexual abuse cases, assault cases, verbal abuse cases and the vicarious traumatisation for the practitioner. The escalation in cases is noted but attributed to increased reporting, not necessarily increased incidence. Notwithstanding, it was acknowledged by all participants as something that EC needs to notice and become sensitive to.

4.2.2.2 Engendered and Reactive Organisational Responses

Gender inequity in EMS structures exists. Moreover, female staff must contend with gender derogatory conduct from senior managers within the organisation and abuse from the communities they serve in a serial and protracted manner, the extent of which is captured in the Independent Online, as indicated by participants: "EMRS head suspended after probe" (Comins, 2009) and The Witness: "Outrage at 'sexist comment'" (Ngcobo, 2012) reports.

"We have every right to get pregnant." That's the response of paramedics who have expressed their outrage at allegedly sexist comments made by their boss…general manager of EMS, Nkateko Sithole. Paramedics quoted Sithole as saying that one of the challenges facing the Emergency Medical Services (EMS) in KwaZulu-Natal is "women paramedics who fall pregnant and go on maternity leave". …Paramedics told The Witness that Sithole's comments were "sexist" and "undemocratic" and they demanded a public

apology…."I felt naked as a woman when Sithole said women paramedics who fall pregnant and go on maternity leave are a challenge," said Mfeka. She said she feared that some paramedics might hide their pregnancy by wearing tight uniforms, which could harm the development of a foetus (Ngcobo, 2012). The above emphasizes a masculine management bias of the EMS systems and the violent and patriarchal society in which this system resides. The irony is that the sexist comment was uttered during a ministerial EMS review committee and the person responsible, as a HPCSA-registered individual, was not held to account by the HPCSA.

It was not disputed that the EC profession is quality assured through the use of protocols. These give expression to the scope of practice by guiding professionals' clinical actions and simultaneously are intended to protect the public. The bias these protocols have is toward "being highly reactive" in terms of what they intend to enable. The protocols within EC are not located in prevention in general, much less in DV cases and prevention (as a curriculum outcome or practice goal) does not meaningfully feature in higher education or short course programmes.

There is no mandatory generic ethical decision-making training for practitioners. Instead, the tools they can use in order to protect the public and themselves are limited to their professional competencies and ethical rules. To stay relevant, amendments to the ethical rules to provide legitimate limits on discretion, education and training reforms, and CPD, are possible.

4.2.3 Emergent Theme: Risk of Regulatory Capture in EC

4.2.3.1 Unfair, Biased and Disproportionate EC Responses to GBV Cases

There is credence given to a tension between constitutional rights, societal structure and cultural practices. The misaligned education and training focus was regarded as the cause of the insufficient response by the EC profession, despite the awareness of equality rights. Participants agreed that awareness of rights is a critical first step in its finding of expression in professional conduct and is worthy of pursuit. The biomedical lens and a narrow conception of EC situations however, make for narrow responses and selective blinding as spoken of by the participant.

> I think [EC] needs to notice it, and I don't think they notice it as much as they should be, simply because education and training does not focus on this. We are focused

> on the blood, the gore, poly-traumatized patients, the severe/acute type injuries and medical conditions, heart attacks and so on… that we don't see that addressing [of GBV]. (Participant 1)

The participant affirmed that you the need to respond, however this response narrowly focused on confidentiality and referral of individual cases. The responsibility to do more in EC about DV is borne out of the first responder role and the decentralized point of care. There is a consistent appreciation from the administration [in alignment with advocacy stakeholders (Tshwaranang Legal Advocacy Centre, 2008)] that EC providers are well positioned to intervene in GBV cases and that the PBEC has a role to play in prevention or intervention. It is an ideal that professions work as teams to complement each other toward mitigating threats to societal wellbeing but there have been no inter-disciplinary synergies in the area of GBV prevention and management.

The unfairness of EC lies in the disproportionate responses to EC burdens. This may be enabled by the bias of emergency treatment and not emergency prevention.

4.2.3.2 Legal and Ethical Premise for DV Responses

The Health Professions Act (Health Professions Act, Act 56 of 1974), does not place direct and DV specific obligations on health professionals, EC workers in particular, to act. It does make reference to the protection of patient safety, however the premise is that the competence to assess harm or potential for harm in DV contexts is present. Public protection is viewed as a strategic purpose.

Re-affirming that GBV impacts EC and is an EC burden, the participants posited that it was "definitely something that we have to look at" and in terms of EC response to GBV…that "more can be done". Silent on whether other non-EMS existing DV interventions were working or not, Participant 1 asserted that the HPCSA and its practitioners are ethically obligated to do so. The rationale to convince rank and file HPCSA-registered EC providers that this is something they must do is the overarching mandate/motto of professional guidance and public protection. The starting point is for every healthcare professional to acknowledge that he/she has a role and responsibility in DV intervention, followed by guidance of the professions and then eventual ownership of the intervention by the profession.

4.2.3.3 EMS Implementation Strategy for DV Responses

The HPCSA is meant to also give realisation to elements of the constitution. The constitution protects the rights of people: the right to freedom of association, to be free from harm, to live in a safe environment and to have health integrity. It was recommended that the DV screening should happen from basic to degree practitioners. Whilst CPD might be a way of getting the word out, it would remain a challenge to attract everyone. “The board can make a recommendation to the CPD committee, like ethics, you must show proof that protocol is included.”

It was proposed that the HPCSA enter into strategic partnerships with key universities to develop experts in the field. The HPCSA can lever a power dynamic as all health-related training falls under the ambit of the HPCSA through the Health Professions Act (Act 56 of 1974) after-all, education providers are accredited by the HPCSA.

A developmental, conciliatory approach was put forward. The questions this approach raises is how does one ensure clinical compliance if tolerance is the ‘name of the regulatory game’. Further, is this consistent with the implementation of other clinical interventions? How does one justify the potential loss of life and vicarious liabilities in a progressive realisation approach?

> Now it is very difficult to change the whole system at once. It depends on other factors outside the board and some employers may not be financially strong. I would be worried if there was no movement at all, but if there is movement, we need to support any kind of movement. Use those who have moved ahead to convince others. Use meetings to show successes. Conciliatory, not big stick approach…not going to go far otherwise as peoples circumstances are all different. (Participant 3)

The submission of a DV screening protocol, as an early output of this study was wholly approved by the PBEC but in the interest of collegiality, transversal appeal and patient safety, all other boards were requested to provide feedback, before submission to the Council for final approval. Delays in GBV policy implementation make mockery of the femicide rate of three per day. If medical personnel have integrity they are likely to do the right thing anyway. However, satisfaction of ethical obligations is predicated on a requisite knowledge base. Experience may provide some context but it is purported below that this experience is deliberately avoided on the basis of ignorance of DV intervention practice. The ethical dilemma that emerges is that the ‘shying away’ is in terms of practice omission. The exposure to the case however, remains and secondary victimization is how the

omission is experienced by the victim…who cannot simultaneously 'shy away' from the abusive experience and condone a lack of care from the caregivers. Dissemination to registered practitioners would be at the Board's discretion and the Participant stressed the need for protocol acceptance before protocol implementation.

The reasons for support of the DV protocol are implicit in the protocol preamble (Annexure 1). The intention behind sending it to the other 11 professional boards was to seek support for whether inclusion in individual professional scopes of practice (with contextual adaptation) or for inclusion in the HPCSA general ethical rules and guidelines.

Challenges to GBV intervention included insufficient capacity from the HPCSA to provide leadership and stewardship for the EC profession in terms of achieving GBV goals. In terms of the National Health Department, HPCSA and the PBEC synergy, communication or partnering around such issues as DV is key. Communication, networking and referral and avoidance of health-delays were the issues raised. This delay is still contextualized in terms of the acute emergency, with little consideration of upstream interventions

The particular efficiency and access to care considerations motivating EC involvement is the 24-hour nature of EMS, the absence of other health care practitioners on scene, and long clinic and SAPS waiting times. Another factor pertaining to capacity is the need for a public health law lens to champion the public interest. The first draft of the protocol was rejected by the HPCSA's internal legal opinion. The opinion asserted that EC workers did not have a role to play in GBV or DV and that it was a job of the police. The substantive argument for rejection was the financial and time cost to the intervention. Essentially, it was a legal opinion devoid of a public health or EC context. In the interest of social justice, there was agreement that practice change could be driven by curriculum reform, relevant protocols and empowering scopes of practice.

The internal consultation process for the DV protocol (Annexure 1) spanned over three years with the only consolation being that there was none before. The protocol was specific to EC but has transversal appeal in the HPCSA as DV victims seek medical assistance from across the health care spectrum. The implication exists for GBV interventions by health professionals to become an ethical obligation across all health professions. The failure of the MDB to make submissions to other boards seems corroboratory toward the claim of a systems bias toward itself. The DV screening protocol was finally approved by

Council in 2014 (The approval is attached in Annexure 1). This formally places scope and ethical obligations of EC providers to routinely screen for DV, a landmark event for the HPCSA, for the PBEC in particular and a novel output of this study (Vinassa, 2013).

4.3 Focus Group Discussions (FGDs)

All the FGDs, lasting between 70-80 minutes each, were started with an introduction and informed consent, followed by a discussion of past, present and future EC practices as related to DV. The researcher allowed the discussion to snowball and facilitated to verify claims, seek agreement/disagreement or manage time or encourage participation. Five FGDs were conducted among EC educators to provide the opportunity for intersections between EC education, practice & regulation to emerge. Two FGD's were conducted in the KZN COEC, one at DUT, one at WC COEC and one at CPUT. The CPUT FGD is not reported on here as it had much reference to EMS education and memo's generated influence the discussion on simulated practice. Participants were qualified at advanced life support level and had many years' operational EMS and educator experience. In the interest of transparency, FGDs, with more in-depth (summarized) responses, are presented individually in Annexure 21 as themes or focus differs due to differences in experience. While the independent focus groups yielded important descriptive insights on certain issues, there were core thematics (interpretive/axial codes and patterns) that are better presented in an integrated analysis. Hence, the integrated, summarised FGD result follows.

A total of 48 EC educators from 2 universities and 2 provincial health colleges in 2 provinces in RSA participated in 5 FGDs. All FGD data codes are integrated and are graphically represented in Figure 15 using Microsoft SmartArt®. The vertical bands show coding from axial (top) to selective (bottom). These selective codes are the abstraction of the researcher. The horizontal flow depicts chronology of issues/themes raised from the focus group over the duration of the discussions. The three columns indicate the beginning, middle and end of the FGD (in unequal parts). Progressive condensation of meaning occurred with time.

The first selective code (Figure 15) that emerged (in the affirmative) was 'The need for EC role definition in GBV responses'. This aggregated from the axial codes such as 'EC Role

definition', 'Concealing of abuse by EC', 'Lacking DV Epidemiology' and 'Challenges of EC responses to DV'. Given this awareness of need, much of the discussion centred on 'Challenges, threats and risks of DV intervention in EC'.

Much of discussion was self-centred on perceived occupational risk. There was little concern for mortality and morbidity risk of the victim community. 'The value proposition of EC relative to the public interest of GBV prevention' was another emergent theme. There was no consensus on either except that 'The EC role, identity and re-contextualisation needed definition'. 'The presence of contradictory EC practice' gave rise to the propositions of 'A paradoxical nature of EC practice' and the emergence of 'Reciprocal implications for DV and EC'. When reverse contextualised (theme to data) and with 'theme' taking precedence over 'time', similar selective themes emerge (Annexure 22).

The results presented above emerge from perceived curriculum and practice challenges to EC responses to GBV. It considers the distorted epidemiology of GBV, likely to contribute to the distorted responses to DV. Occupational risk from DV cases, the concomitant need for personal protection and the public interest for improved responsivity to DV emerged as conflicts of interest, rather than non-competitive interests. This is fuelled by the sense of futility of intervening in cases of DV and the emergent practitioner victimology.

Four DV and EC reciprocal implications arose: (1) DV Specialisation in EC; (2) Classification and referral of DV cases; (3) The need for an EMS re-orientation and (4) Normalising the experience of GBV cases. Ambivalent perceptions prevailed in all four themes. Whilst DV was seen as an area of specialization, participants struggled with conceptualizing specialized practice in EC. Specialisation is an aspect of professionalization, for which the DV health sector response 'value proposition' evaded conceptual reach. Referral was agreed to but distorted epidemiology may undermine proper classification, upon which appropriate referral is predicated. The need for EMS orientation to DV was reluctantly acknowledged and current practice was simultaneously defended. The experience of DV was normalized; so were the EMS responses. It is likely that the ambivalence above confounds the EMS 'positionality' and consequent responsivity in relation to the health sector response to DV.

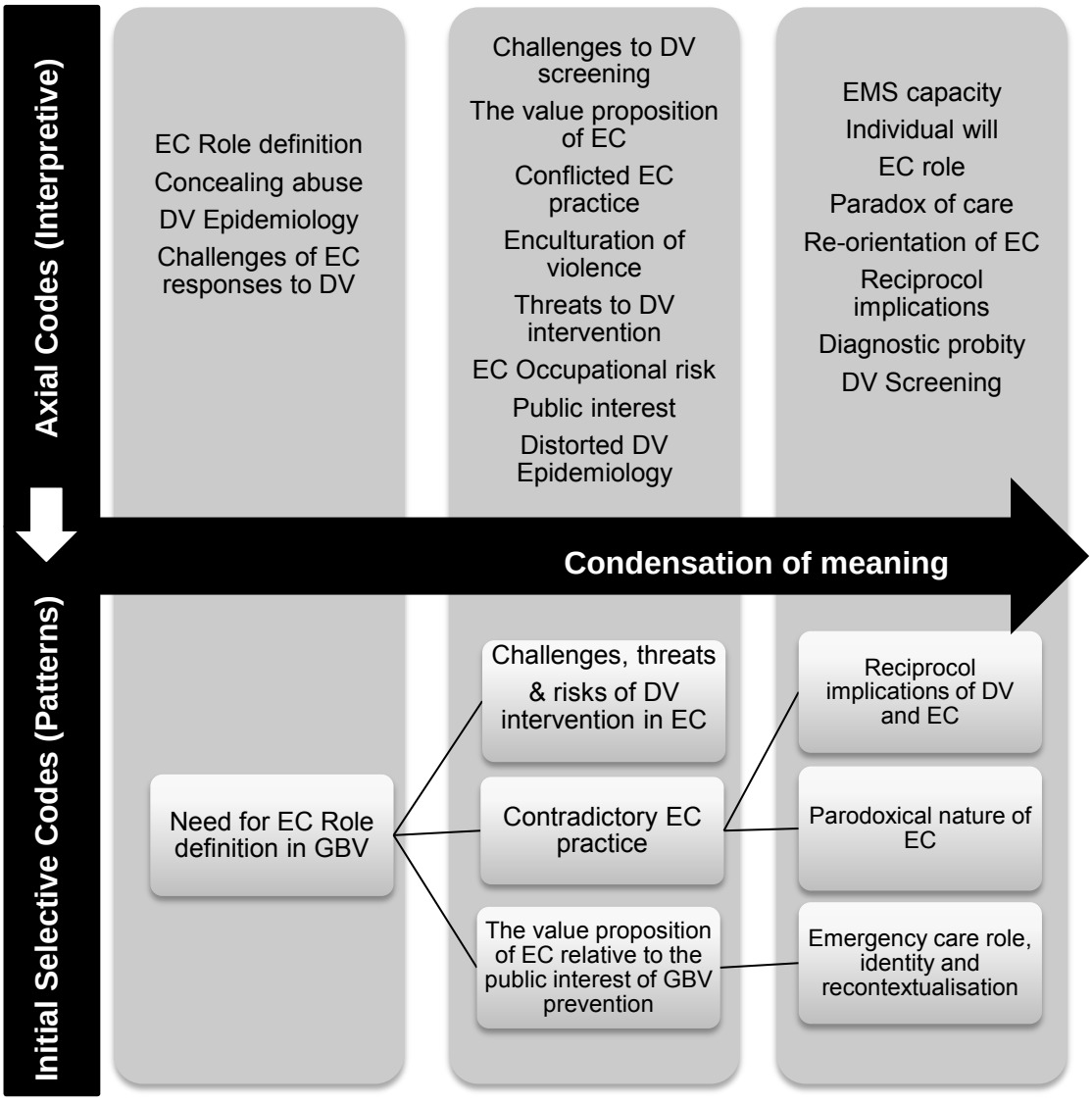
There was early expression amongst some participants that prevention was part of the EC role. The prevention put forward was in the context of injury prevention. EC provider experiences of non-DV trauma influences the minimization of DV cases by decreasing tolerance of abuse in one participant's own relationship but conversely elevates the 'horror threshold' of violence in the lives of patients. Challenges for DV screening included: Practitioner motivations, lack of supportive systems and imperfect information. Further, the EMS has perceived institutional barriers such as narrow "job functions" or false assumptions that serve to limit capacity to intervene in DV cases. The initial interpretive code was that the role of EC providers deserved redefinition. The reasons for the challenges to DV intervention (in the form of screening for example) lie embedded in the lack of EMS organisational or individual obligations to provide professional responses and uncertainty on what form such responses may entail.

Themes include the concealing of abuse with some explanation on how and impact there-of. The value proposition of DV education in EMS is to encourage collaboration and to challenge the pretence of DV non-occurrence. Conflicted EC practice results in the delayed EC provision and diminished nature of EC. There exists selective empathy and vigilante support by practitioners who simultaneously engage in subconscious subversion of the EMS and active reflection on practice. The paradox of practitioners as victims and perpetrators is enabled by personal experiences of DV victimology or perpetration and has professional consequences. In some cases, the ambulance becomes a 'mobile abuse centre'. In addition, the professional role of EC workers in DV is delineated to include an advocacy and advisory role and support for selective screening. However, the potential for reduction of DV-related mortality was an insufficient determination of core EMS function and forensic specialisation in EC was not supported.

The concealment of abuse by perpetrators and victims is central to the psychology and nature of DV. Concealment of abuse by EC practitioners violates codified ethics and serves to vicariously promote the perpetration of abuse. The value proposition of DV education in EMS is that the many positions, tensions and conflicts of ideology, practice and their assumptions can be appraised, tested and reviewed. Conflicted EC practice was reported as delaying provision, diminishing or denying EC to DV victims. Perhaps the most significant obstruction to defining EC role in DV responses is the paradox of EC

practitioners who are simultaneous victims or perpetrators. The role of EC workers in DV was thought to be inclusive of advocacy and selective screening but forensic specialisation or as a core function was not supported. In one FGD, more reference was made to children in the examples given than to women, suggesting differences in exposures and experience between participants.

Figure 15: Axial Coding, Selective Coding and condensation of meaning of emergent themes from an integration of FGDs



A central theme was the implications of DV epidemiology on EMS evidence-based practice. This gave rise to the 'encultured' notions of violence and threats to DV intervention. The later discussion called for a re-orientation of EC for broader responsivity and forensic practice and a challenge for EC protagonists to act. The practice of evidence based emergency medicine has been very selective and GBV has not been responded to appropriately. Given that DV and responses to it are culturally (socially) entrenched in the EMS, a re-contextualisation of DV in EC was unopposed in the interest of broader responsivity. This re-orientation must include forensic accountability. The threats to DV intervention are part of the challenge to act. Diagnostic probity is enabled by clinical case finding. Sentinel surveillance, currently wholly omitted, is a health information system imperative. The challenge is that typical patient assessment is taught in a historically atypical patient cohort. Prehospital screening and responses to DV are to be judged by a determination of therapeutic endpoints and capacity limitations.

4.4 Non-participant Observation (N-PO)

4.4.1 Introduction and Simulation Definition

Participants were of all race groups in RSA. Multiple cultural-linguistic groups were present including predominantly Xhosa, English, Afrikaans and Zulu. There was a balance of men and women, reflective of the institutions' attempts to attain equity in selection. Whilst class affiliation was not specifically documented, most participants were likely to have had exposure to violence in the family or in the community, given its high prevalence. Some were married, older than the average undergraduate student and employed in EMS organisations as EC providers. Simulations were normally scheduled sessions, some with instructors and others by peer review and was unscripted by the researcher. In total, 248 students were observed conducting 124 simulations (2 students per simulation). Each advanced or intermediate programme simulation had an observer[50] ratio of 6 learners to 1 simulation venue/instructor, whereas the basic life support programme had a ratio of 12 to 1 respectively. These peer witnesses to the simulation, were also observed as they would critique the performance at the end. Observations comprised 60 hours over 4 sites in 15 weeks.

[50] These are other students observing the simulation.

Simulations are used as practice for real life situations, such as flight simulation to train pilots. In EC, simulations are used to present a limitless array of EC situations to which the student must respond. To mitigate the diversity of the clinical presentation, a standardized approach of patient assessment is applied and modified based on urgency of the presenting complaint. This approach is intended to provide students with multiple exposures to EC presentations without placing real patients at any ethical risk of an inexperienced student. The random nature of emergencies also renders live scenarios impractical. The HPCSA values simulation performance, in part, as indicative of clinical competence and graduate attributes and therefore uses simulation as a proxy tool for regulatory compliance monitoring.

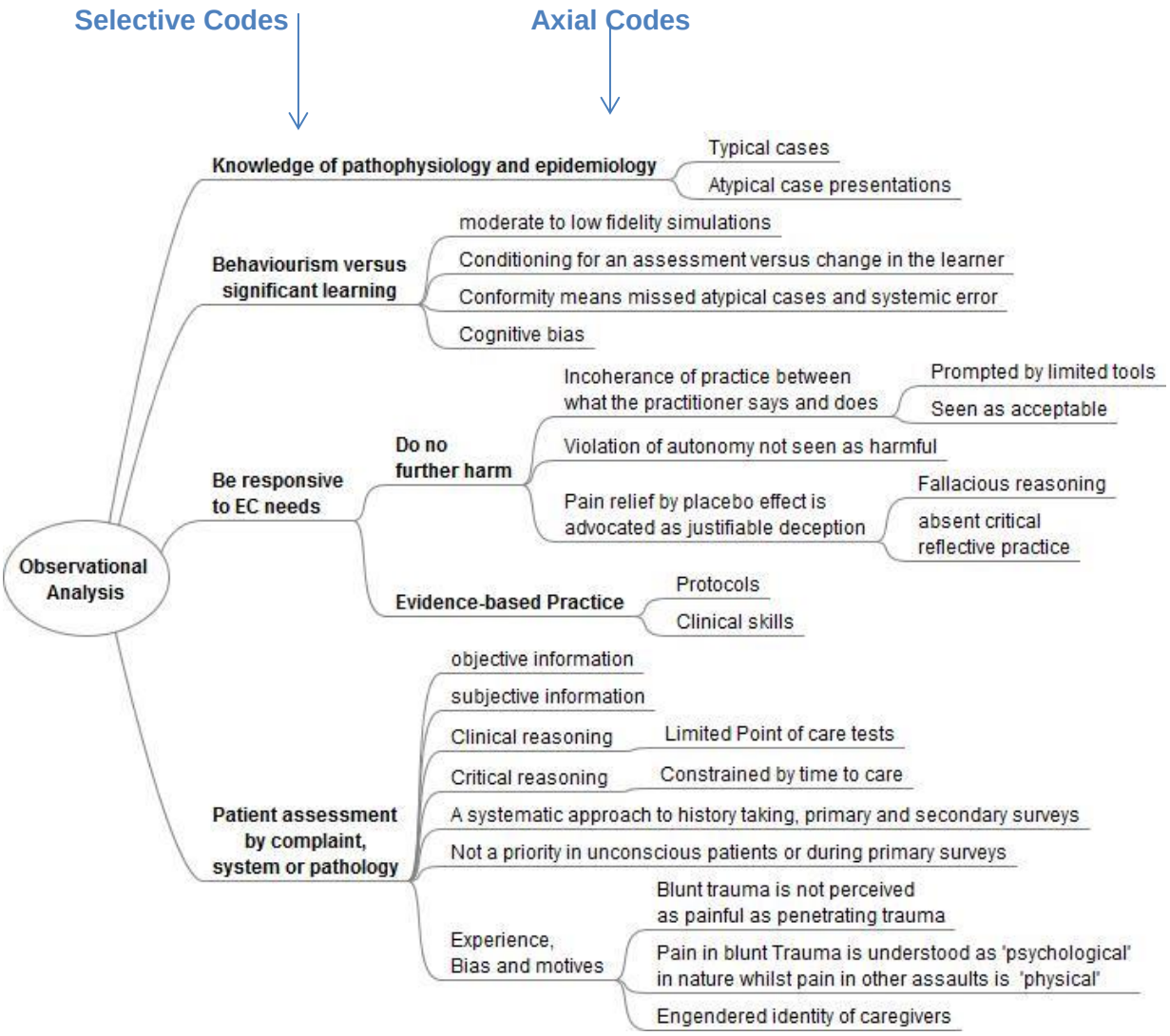
The duality of student and clinical practitioner seems to enable a role translation in the simulation from student to unsupervised practitioner as it is a safe, conscience-free space to sharpen clinical approaches (for typical and atypical cases) and to learn from common clinical errors (one's own or fellow student's) in assessment and treatment. The EC student is eligible for HPCSA registration in independent practice immediately upon study completion as there is no requirement for community service or internship, for which the simulation experience serves as a part proxy measure.

The EC simulations were observed in two Higher Education Institutions and two Department of Health provincial Colleges. The maps of the simulation venues were similar in ergonomic design, differing only in level of comfort, size and sophistication of equipment. This was typically a square room with students seated peripherally and the simulation manikin in the centre of the room, in the supine position. The focal point was the manikin with two performing students rotating around the simulated patient. The simulations occurred simultaneously in 2-3 neighbouring venues, with 6-8 students per simulation room in the degree programme and 6-12 in the short course programmes. The physical layout had students seated opposite each other and around the simulation manikin. In all 124 simulated cases, the method was to use a Laerdal Resusi-Anne® simulation manikin in teaching basic approach to primary and secondary assessment or Laerdal Vital Sim® or Sim Man® simulation manikin to enable diagnostic interaction and invasive interventions.

4.4.2 From Data to Text

To enable migration from data to text, the analysis deliberates on: emergent dyadic contrasts; knowledge and awareness of DV perpetration, rights and recourse; EC participation in the knowledge economy; psychological pain, 'placebo' relief and the defence of unethical practice as well as the simulation as an intersection of clinical and paedagogic needs. Figure 16 provides the coding for the N-PO and is unpacked below.

Figure 16: Selective and Axial Codes for N-PO



Observing the simulations provided a unique insight into the 'creation' of EC graduates. It holds particular promise for GBV case management, but it would seem that current approaches are biased to acute coronary syndrome management, shock responses and

resuscitation (irrespective of cause). The examination of simulated practice has students preparing for an exam, rather than role-playing as actors in GBV intervention. The focus is on technical invasive skill implementation rather than attitudinal orientation and knowledge transfer about the epidemiology of abuse. This constitutes opportunity to do the latter. Issues needing attention include: ethical strategies to encourage hospital/social service referral (including confidence in the hospital/social service referral); conscientising EC providers about the DV vulnerability of at risk groups such as the elderly, people living with disabilities, children etc.; implications of the Children's Act; role definition of the SAPS, social worker, EC worker, hospital nursing staff etc.

DV cases are not normally presented as DV in the simulations, but as common assault, as if the perpetrator identity is irrelevant. DV is experienced in the clinical EC context, however, as expressed directly and by the convincing narration of some DV simulations. In terms of emergent dyadic contrasts, accidental and non-accidental injury or violence and non-violence dichotomies were not observed. The interplay between the knowledge and awareness of DV perpetration, rights and recourse by the patient and the consulting health care provider leads to one of four scenarios with the best health care scenario emerging from both being empowered and the worst scenario arises from both being disempowered and ignorant about gender and health rights.

Further, 'the diagnostic assessment of an emergency need is by complaint, body system or pathology', predicated upon by the former selective code. 'Behaviourism appears to be competing with significant learning' in that conditioned responses may preclude deeper analysis such as the kind needed in DV diagnosis and response, the complexity of which is evident in the diagnostic approach of Figure 17, to be read in a top-down fashion. Figure 18 categorises the concepts, constructs and propositions emerging from the simulations. Of note is the systematic approach to patient assessment, stoic commitment to doing no further harm and influence of western resuscitation agendas. The N-PO of the simulated EC practice (Figure 16) revealed 'the need for knowledge on pathophysiology and epidemiology' on the basis that emergencies may present as typical and atypical presentations for which the practitioner may not be prepared.

Figure 17: Schematic for general diagnostic approach in EC situations

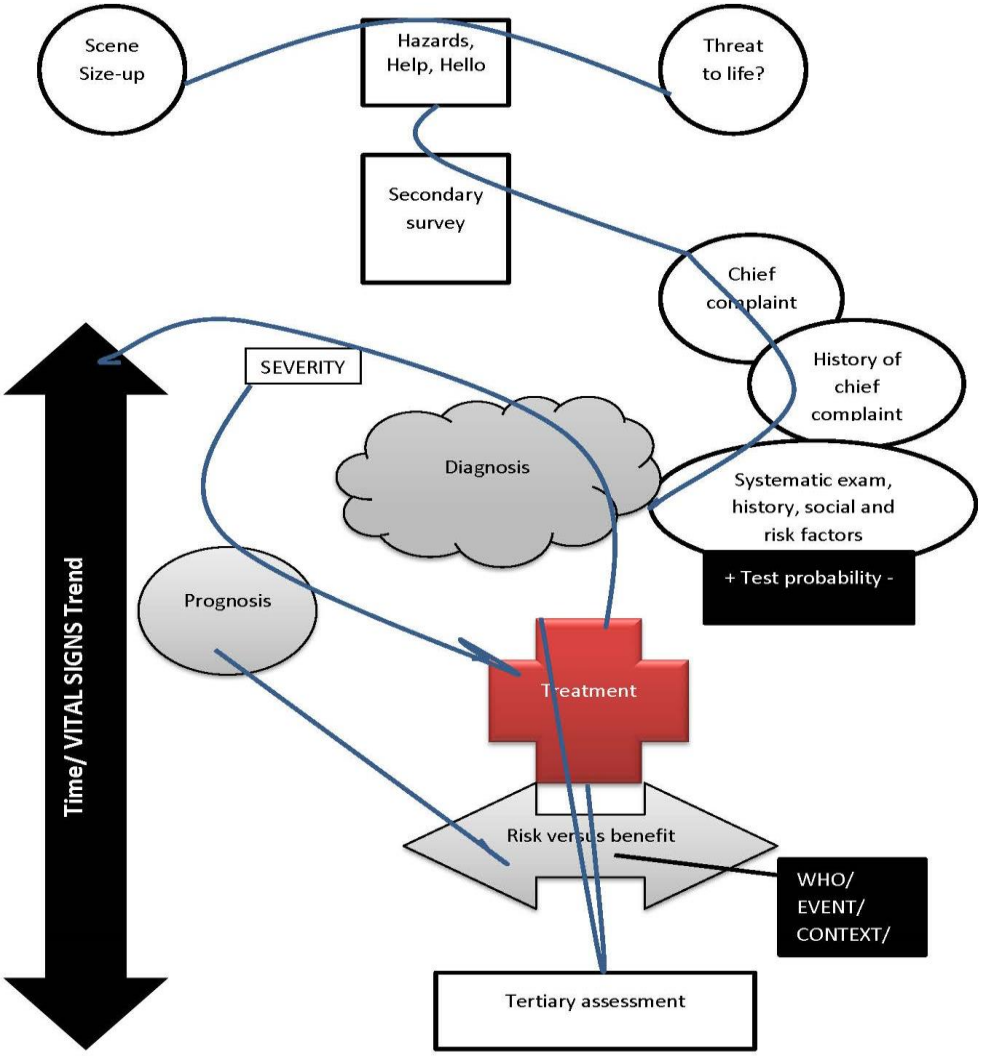
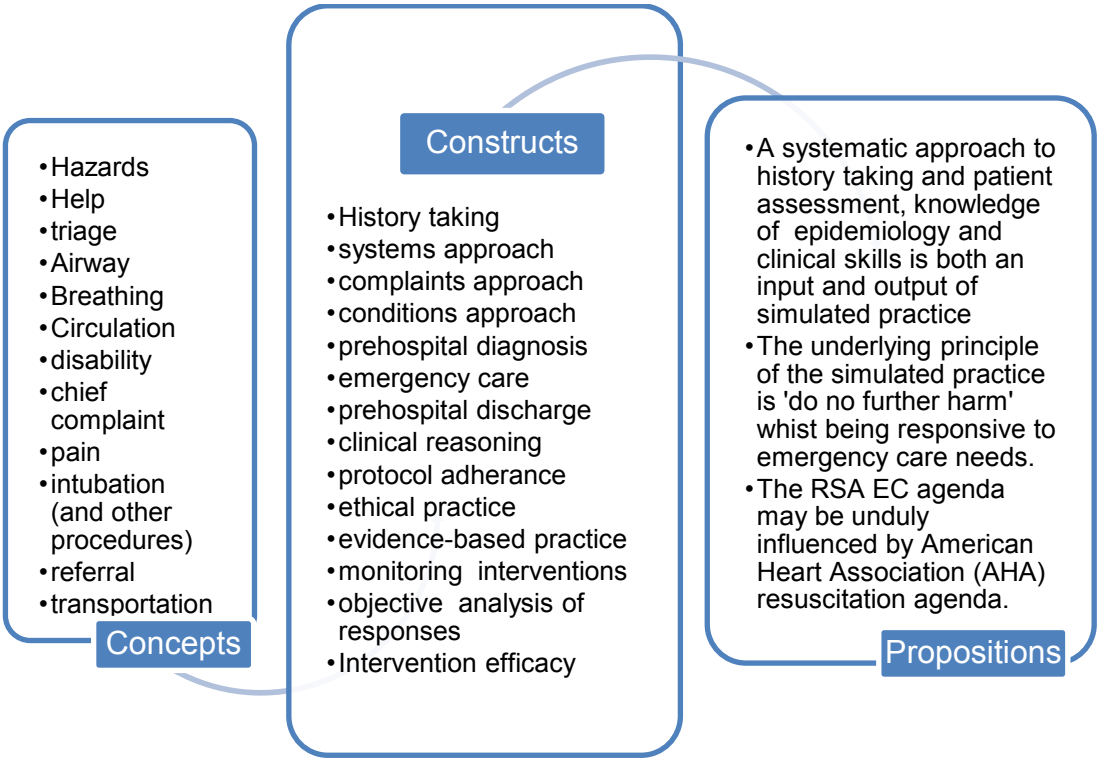


Figure 18: Concepts, constructs and propositions emerging from EC simulations



This diagnostic approach, seen in the observations, begins with a scene safety assessment and primary survey to determine life-threatening risk. The secondary survey and evaluation of the chief complaint and history will provide options for a differential diagnosis, the severity of which (indicated by objective trends) will prioritise treatment bundles (pending risk/benefit). This approach is consonant with the UK and Australian EC diagnostic approaches (Willis & Dalrymple, 2015). However, if the EC provider does not have DV on his/her radar, then every single element in Figure 17 derives less perfect information upon which to base treatment/referral and the diagnostic process is thwarted.

EC participation in the knowledge economy was thought to be that of knowledge user and there was motivation amongst some students to contribute, in time, to knowledge creation. The notion of psychological pain, ‘placebo’ relief and the defence of unethical practice suggest much is to be done, amongst students, graduates and educators in the promotion of ethical practice and prevention of unethical deception. Moreover, the simulation intersects clinical and pedagogic needs. A systematic approach to history taking and patient

assessment, knowledge of epidemiology and clinical skills is both an input and output of simulated practice. The underlying principle of the simulated practice is 'do no further harm' whist being responsive to EC needs (Figure 18). The limitation is that the former ethical concern was limited to acts committed, not omitted and the latter assumes that needs are appraised and correctly prioritised.

4.4.3 Emergent Dyadic[51] Contrasts

The simulations observed were of the participants' and facilitator's choice. Some simulations involved cases of GBV. Later it emerged that it is not the norm to simulate GBV cases. It would appear the GBV cases were symptomatic of the Hawthorne effect, given the informed consent sought. Penetrating trauma is commonly dealt with, but without regard for who the perpetrator is. Simulations included violence and non-violence contexts with chief complaints such as chest pain, pedestrian accident, blunt and penetrating trauma, cardiac arrest, second degree heart-block, pulmonary oedema, paediatric dehydration and malnutrition and a paediatric fall with seizures, amongst others. As the researcher intended to be a non-participant, no simulations were scripted and imposed.

The dyadic contrasts in nature of cases simulated were: 'medical' and 'trauma' cases (compensated or catastrophic), conscious and unconscious cases, cardiac arrest and 'peri-arrest' situations, adult and paediatric cases, singular physiological insults and poly-trauma and the presence or absence of co-morbidities. Interestingly, accidental and non-accidental injury (NAI) or violence and non-violence dichotomies were not observed. Basic simulations contrasted with advanced simulations in terms of sense of agency of the student and level of control of the facilitator. No contrast was observed in narration between student led simulations and lecturer-led simulations. The clinical content was mostly tailored for overt trauma or acute coronary syndromes. Even then, the competencies focused on intensive care medicine such as resuscitation and initial stabilisation, clinical assessment, monitoring and clinical measurement and safe use of equipment. In contrast, the diversity of EC

[51] The dyadic technique of congruity achieves "consonance through excluding, defining and contrasting one part of the dissonant dichotomy with the other" (Shoham, 2006).

contexts was under-represented (Clements & Mackenzie, 2005). Even though EC applies biomedical knowledge (about bacteria and viruses for example), in the practice of emergency medicine in a community setting (such as an informal settlement or street corner) neither had any emphasis in the simulations. The impact of this is wasted learning opportunity and limited pathology simulation exposure.

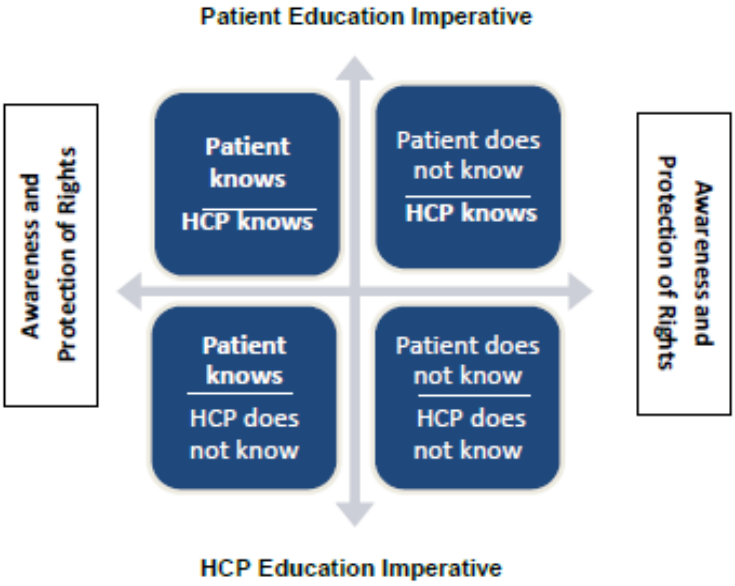
4.4.4 Knowledge and Awareness of DV Perpetration, Rights and Recourse

In pursuit of an initial 'substantive' theory about the simulation setting, the following matrix (Figure 19) emerged as the possible scenarios encountered in the simulations. The patient knowledge, awareness and protection of human rights appear as the numerator whilst the health care provider equivalent is the denominator, given the power dynamic of a DV-related EC situation.

In cases where the practitioner and the patient had knowledge and experience of the presence or history of violence and were aware of their rights and protection thereof, responsivity was enhanced as there was consonance between the patient and practitioner needs and actions. Where the patient is unconscious, in denial of the violence or unable to appreciate the DV, but the provider ‘knows’ and has made the provisional diagnosis, the opportunity exists to advocate for the patient and to facilitate the transfer of empowering knowledge. In these two scenarios patient education is the imperative. Where the practitioner did not diagnose the presence or history of violence, but the patient understands her abusive context, ‘clinical failure’ results as health needs are not appraised and consequently not met by the provider. Further, the patient may experience a secondary victimization from the perceived health system failure to care. A hopeless scenario emerges when both the patient and practitioner are oblivious to the GBV due to the inability to make the diagnosis and/or the normalization of abuse and its health sequelae. In the latter two scenarios, health care provider education is the imperative[52].

[52] Imperative: Urgent or important, position or action to take.

Figure 19: A matrix of patient/health care provider experience/knowledge of GBV perpetration and emergent imperatives



4.4.5 Participation in the Knowledge Economy

During the simulation feedback session, some discussion ensued on challenges facing professional responses to GBV. The challenges to responsivity include the lack of GBV-specific patient report forms. Not having to document the details of the GBV case undermines medico-legal accountability. Perceived indifference by the police, the need for new protocols that sheds the bias of the global north and stigma are also challenges.

> At SAPS there is no different area to disclose rape. Privacy is not protected. You have to stand in the same queue where everybody is. It is a private thing. Your dignity is taken away from you. You have to talk louder for all to hear. They were indifferent. We tend to normalize things *"Did you wash? Ahhh Sisi [Sister], you not supposed to wash!"*. Yes [there is a role for us]. We come across these cases. You tell the police, but they don't care. Maybe we all need new protocols. A clinical point of view…AHA [American Heart Association] and Europe, they are not exposed to what we have….we have rapes, hijacking, rate of MVAs [motor-vehicle-accidents]. Even if there was a dedicated room, there is a stigma attached to the room for rape.

As to who is going to solve the problem of GBV in EC, the students replied they were. One position was that despite the international footprint of the paramedic as employee and a

decreased reliance on other medical professions than before, the footprint did not extend to knowledge broking or knowledge creating in EC.

> Our paramedics are sought after but we are not role players to that liaison committee [International Liaison Committee on Resuscitation]…we have MI's [myocardial infarctions], more trauma….we are knowledge users, not knowledge creators….in the old days we had to rely on Doctors and nurses….now we can make the change.

Participation in the knowledge economy was limited to utilization of mostly old and procedural knowledge. It was apparent that some students were already thinking about choosing their measure of EMS success, but not knowing was a source of stress and would erode patient confidence. HPCSA directives were sought.

4.4.6 'Psychological pain', 'Placebo relief' and the Defence of Unethical Practice

A female patient presented with pains to her body due to blunt trauma from being physically assaulted ('punched') by her boyfriend. She presented with haematomas and patchy ecchymosis (from new and old bruising) on her chest and arms. Before assessment and treatment was complete, the student enquired about the patient's intention to go to hospital. He noted the need for chest X-rays and the option of laying a criminal charge. He assessed the patient's level of comfort in talking to him and assured the option of a female practitioner at the hospital. He enquired into the where-about of the boyfriend and encouraged the idea of transport to hospital, in the interest of safety. In providing pain relief, he ruled out the presence of alcohol and other recreational drugs. He decided on Morphine administration. In the deliberation, the facilitator questioned the decision to administer Morphine. "Why morphine? She can walk. There is no bleeding. Do you want to make her a stretcher case?" The group response was most unexpected:

> With those patients you work psychologically. You tell her you will give something for pain. Then you draw up 20 ml normal saline. And you give her 1 ml of saline.

In enquiring about the pain relieving benefit of oxygen the response was that it no longer works as patients are aware of its purpose: "They know oxygen by now. I assure you, they know oxygen." The facilitator, disturbed by what he was hearing, sought confirmation: "So you are going to put up a drip and give her saline?" Demonstrating firm belief in such practice, to a chorus of support, the participant response was: "If you need to, you need to. You must say you are giving morphine." Concern about such practice being unethical or not

indicated in the protocol was met with arguments in defence of the practice, such as: “You ‘test’ the line with it (saline).” Further, acknowledging a violation of patient autonomy was justified by the slippery-slope assumption of ‘no harm’.

> It may be misleading the patient but you are not doing any harm.
>
> Females talk very easily to females. If the partner is there, we have a conversation in private.

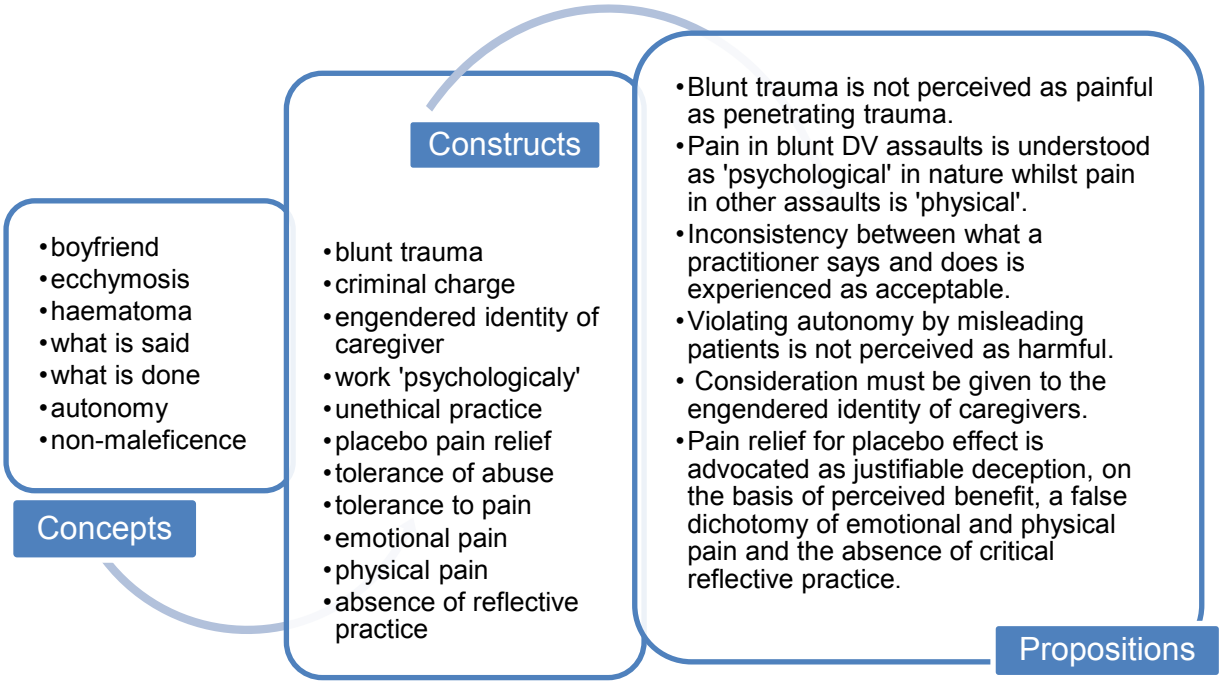
After some banter, the deeply embedded motivation for the unethical and unauthorized practice of placebo pain relief emerged. Students believed that tolerance *of* abuse implied tolerance *to* pain and consequently did not amount to any indication for pain relief. This practice is reinforced by previous experiences in the health system:

> “It worked….most of the time, [for] Psychological pain.” [In] Another patient, [the application of] nasal prongs without even oxygen…the patient feels better.” In [Place X], patient is a known asthmatic- patient fakes difficulty in breathing and the caregiver’s fake care.”
>
> Most of the time, they are used to the abuse. Pain is more emotional than physical.
>
> How will we treat it? Calm and reassure. No morphine, but morphine placebo is okay.
>
> You say you are giving something for pain but you give 1 ml of saline. It is the psychological (benefit) of saying morphine but giving saline. It may be misleading but not harmful.

Pain relief for placebo effect is advocated as justifiable deception, on the basis of perceived benefit, a false dichotomy of emotional and physical pain and the absence of critical reflective practice (Figure 20). There was no concern for a downstream lack of trust and confidence in the emergency service with the premise of the conduct being that the tolerance of abuse implied tolerance to pain.

The proposition that violence perpetrated by somebody in a domestic relationship is less traumatizing than an unknown perpetrator and creates victim tolerance to abuse promotes a denial of EC. The theoretical abstraction is an undermining of patient safety, unethical clinical practice and a denial of the health right to access EC.

Figure 20: Propositions emerging from false beliefs, fallacious reasoning and un-reflective practice



4.4.7 The Simulation as an Intersection of Clinical and Pedagogic Interests

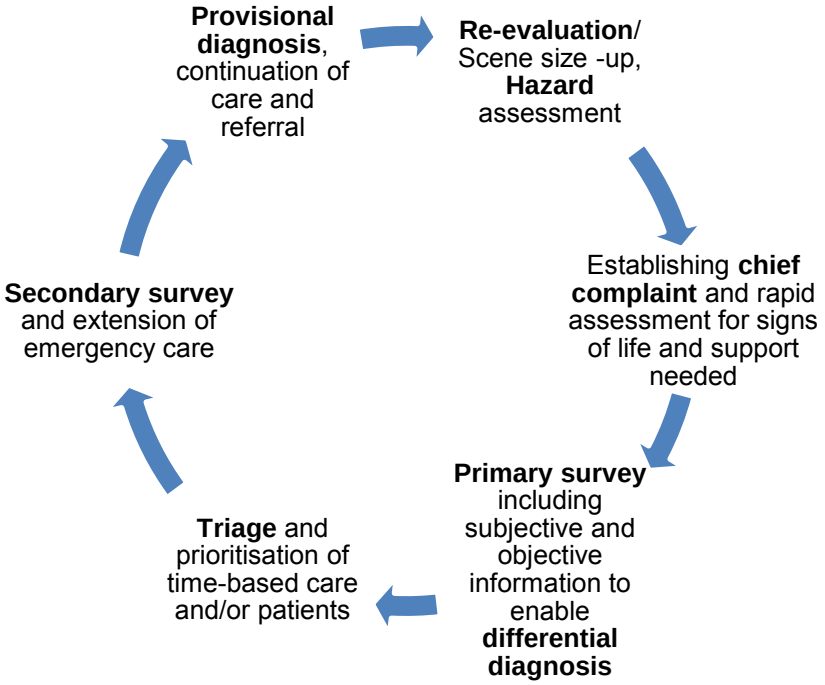
In the simulated practice, the simulation as a learning tool appears to promote the analysis of risk in the approach and care of patient's in the prehospital milieu. This is facilitated by stoic imposition of history taking, primary and secondary survey in a sequential pattern. According to a facilitator, "You cannot do simulations if you do not know your work. Sequence, theory and skills are needed to do a simulation."

Clinical and pedagogic interests in EC are aligned. The knowledge, attitude and skills of an EC provider should be able to satisfy the EC burden and clinical need. The clinical need is to balance the threat to life (indicating urgency of interventions in response to a physiological insult), resources available (indicating what is possible) and practitioner capability (indicating what is to be expected).

The pedagogic need is to transfer knowledge on how to critically and efficiently appraise this threat to life or quality of life. This is done by an in-depth understanding of triage and differential diagnosis, mechanism of injury/illness, acute pathophysiology and sequelae for the purpose of prioritizing care bundles. Such prioritization remains a mainstay of EC

differentiation from other disciplines in medicine. The second pedagogic need is to explore what is possible through technology, principle of practice and satisfaction of clinical needs. Practitioner capability is the result of a professional scope of practice (linked to the professional registration category), protocols and guidelines, all of which are clinical practice outcomes of the EC programmes. The simulations, therefore, as a pedagogic device, is instrumental in shaping 'auto-pilot' approaches to traumatizing critically ill and injured simulated patients so that the provider may remain functional in a dysfunctional setting (such as road accidents on a stormy night, gang violence in a terrified community, children dying of dehydration and suspicion of a communicable disease).

Figure 21: A heuristic of EC simulation progression



The heuristic above (Figure 21) maps the cyclical nature of the EC clinical approach, to which instruction aligns. The scene size-up is to consider environmental factors that might affect the presenting condition and reciprocal care. Hazard assessment includes the extent of personal protective equipment and obvious risks on approach. In some cases the chief complaint may be overt, such as 'shark bite' or 'stabbed-chest'. The determination of the need to initiate CPR is assisted by looking for signs of life and considering what help is

needed (advanced-life support, traffic or fire department). A primary survey of vital signs and mechanism of injury enables a triage and prioritization of time-based care. Where multiple patients are present, patients, as opposed to conditions are prioritized. A secondary survey considers body systems and responses to the insult. Now that a differential diagnosis is possible, referral, evaluation and continuity of care are paramount. As seen in the simulations, diagnostic and clinical errors are possible and probable (due to imperfect information and limited point of care testing) at every stage.

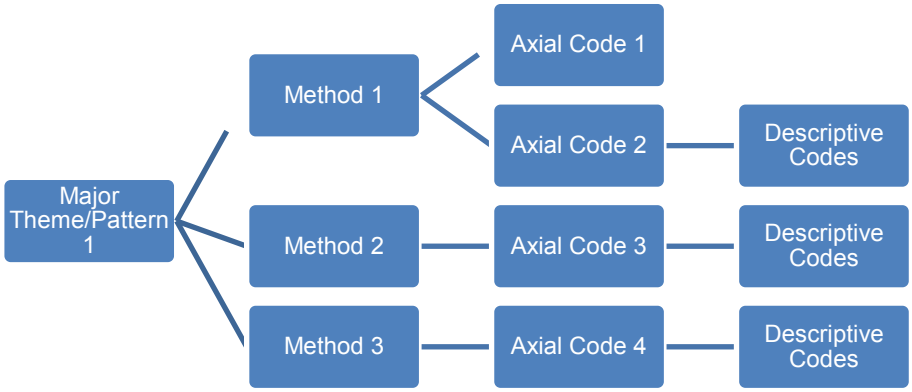
4.5 Convergent[53] Validity of Phase I Results

Strengthening the role and scope of the EC discipline regarding GBV by promoting theory, policy and clinical praxis served as the title of this research endeavour. It served to intersect the loaded concepts of gender, violence and EC; through the discipline of forensic medicine and the lens of critical theory. Further complicated with theory, policy and clinical practice; it emerged that the study could not rely on singular methodological approaches. Hence, multiple methods, coherent with QD research design were employed. Their contribution to the study question is discussed below.

Challenges to data collection included multiple methods, multiple sites (7) in two provinces, delays from loss of some anonymised data through theft and the researcher as novice. The open, axial and some selective codes (emergent themes) are presented and verified by triangulation. In keeping with the deconstructionist approach of critical theory, the summary themes emerging from each data collection strategy are presented using FreeMind® 0.9.0. The axial and selective codes from each mind-map (EiDM, interviews, FGDs and N-PO) are triangulated with each method to organically create six themes that have common expression in multiple methods. Figure 22 displays the structure of the mind-maps to give expression to such triangulation.

[53] Convergent refers to the tendency of the themes or codes to move toward a point or toward each other to the extent that a new, more abstracted theme or pattern emerges.

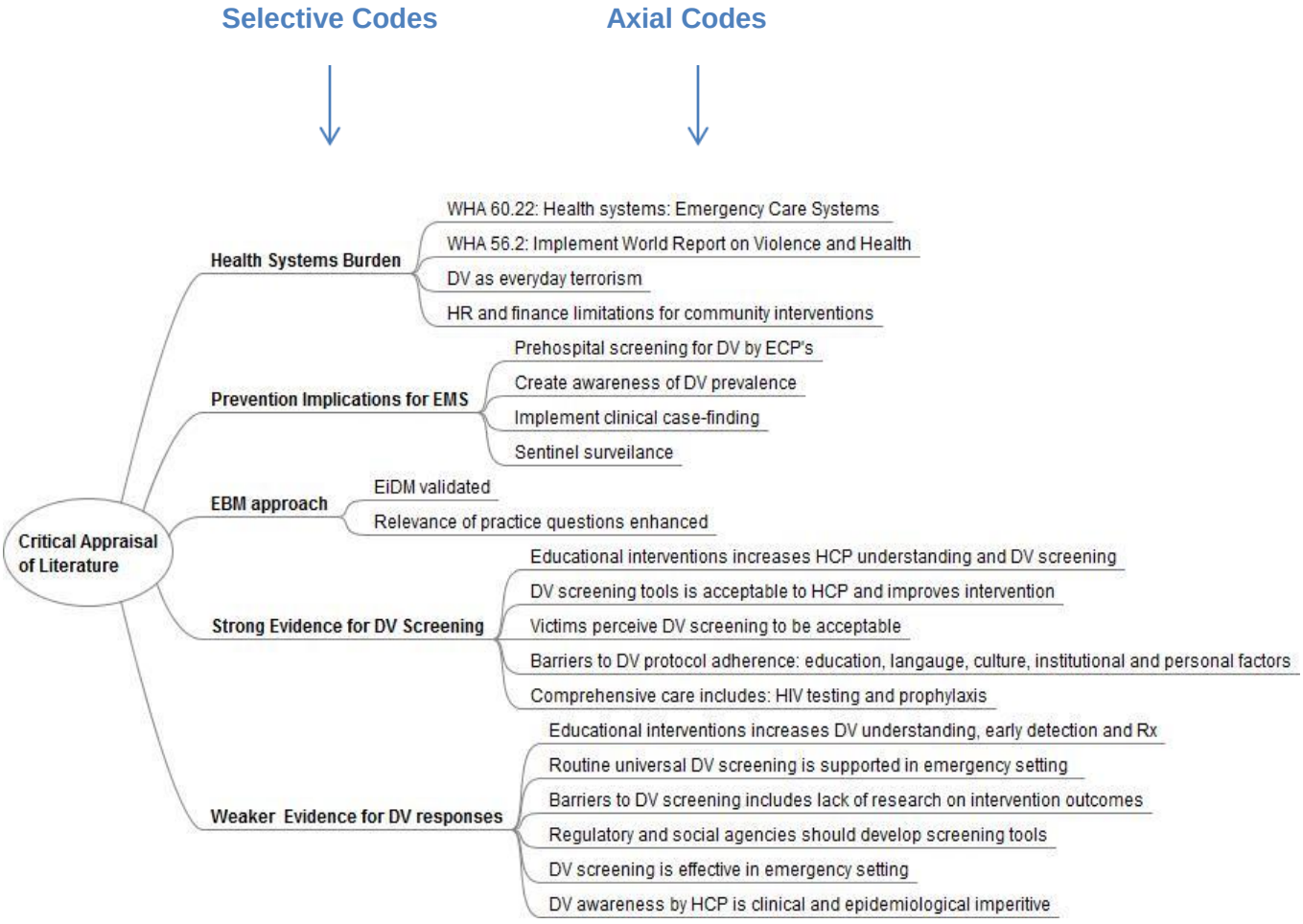
Figure 22: Mapping Qualitative Descriptive Themes for Phase 1



When mind-mapped (Figure 23), the EiDM synthesis revealed a 'Health systems burden and response to GBV' of global proportions with historical limitations on human and financial resources for community interventions. 'Prevention implications for EMS' was a pattern that encompassed prehospital screening for DV by EC providers, creating awareness of DV prevalence, implementing clinical case-finding and sentinel surveillance. 'An Evidence-based medicine (EBM) approach to DV responses by EC' was equally patterned. 'Strong evidence for screening' was that it improved interventions, understanding and acceptability there-of. Barriers to screening were well evidenced. The intervention, therefore, may promote itself. 'Weaker evidence for DV responses' included educational interventions as promoting of understanding, support for routine and universal screening, the need for research on intervention outcomes and the clinical and epidemiological imperative of DV awareness. Continuous Professional Development (CPD) activities and medical curricula, are crucial to build agency amongst EC providers for implementing screening and overcoming its barriers.

The health sector must work collaboratively to combat DV. The World Health Assembly (WHA) mandate for EMS to play its role in health systems and violence prevention/responses lays in WHA resolutions 60.22 and 56.2 respectively (WHA, 2007). Further research is needed about the role of first responders in DV prevention and their effectiveness. An EC response knowledge base is needed in order to assist system implementation and evaluation. Strategies "informed by research evidence during development are most likely to be effective in preventing GBV on a large scale" (Gevers, Jama-Shai, & Sikweyiya, 2013).

Figure 23: Axial and selective codes emerging from EiDM



The experience of DV is a common EC burden, peaking at the end of the month and associated with alcohol consumption. Women and children are mostly victims. Whilst the lack of collaboration between SAPS and EMS is of concern, there is hope amongst EC providers of a return to a more collaborative relationship. There is a perceived EMS role in cases of gender violence but sufficiency of current practice is questionable but is opportunity for change. Threats to EMS improvement, in general and with specific reference to DV responses, are: vindictive managers who view suggestions from the ground as criticisms and embarrassment; a lack of pride amongst the EMS workforce and that the basic qualified staff was in large numbers. The problem was perceived as being an EMS that is personality driven, rather than quality managed. This is compounded by a real or perceived oppression or fear of reprisals. The training deficiencies were raised in two individual interviews with EMS training managers, who confirmed some curriculum

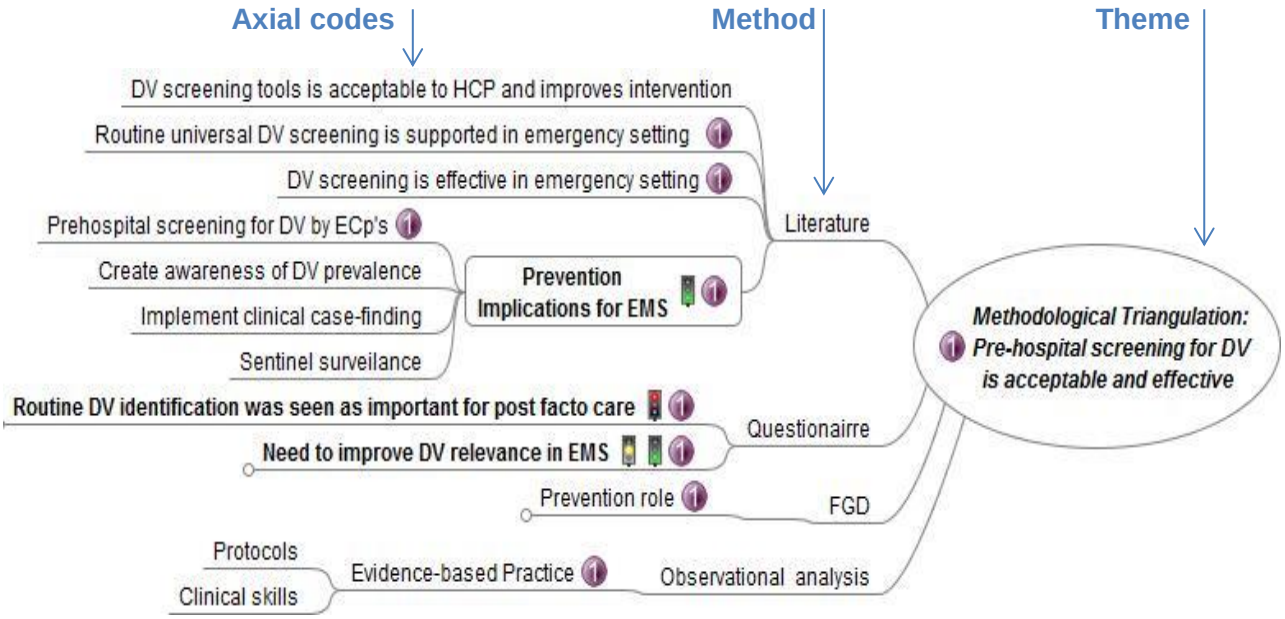
presence but no time or skills to implement them. The complex phenomena under study caused the need for triangulation of data codes to enhance confidence in the findings.

The major themes represent a level of selective coding/patterns and are presented below graphically in Figures 24-29:

Theme 1: Prehospital screening for DV is acceptable and effective (Figure 24)

Notwithstanding that the EiDM content analysis first promoted this theme; all qualitative methods supported this theme. Those surveyed in the pilot spoke of EC relevance, whilst noting that routine identification was crucial to *post facto* care. The FGD highlighted the prevention potential of early detection and the N-PO noted the desire for evidence-based practice.

Figure 24[54]: Triangulated Theme 1: Prehospital screening for DV is acceptable and effective



[54] The traffic signal icons represent codes of Risk (red), Need (yellow) and Responses (green).

Theme 2: The burden of DV motivates EC bio-psycho-social responses (Figure 25)

The EiDM featured WHA resolutions that gave EMS global prominence as a strategy against trauma and violence. The N-PO found participants wanting to be responsive to patient needs. There was potential for patient assessment by complaint, body system or pathology. FGDs challenged current responses and acknowledged the public interest and practitioner interest. The pilot survey documented the absence of DV training.

Theme 3: EC responses to DV should be guided by Evidence-based Medicine (Figure 26)

The triangulation confirmed the theme of an EBM approach to DV. This protects the practitioner as the evidence is intended to be gender-neutral and address a wide range of scenarios.

Figure 25: Triangulated Theme 2: The burden of DV motivates EC bio-psycho-social responses

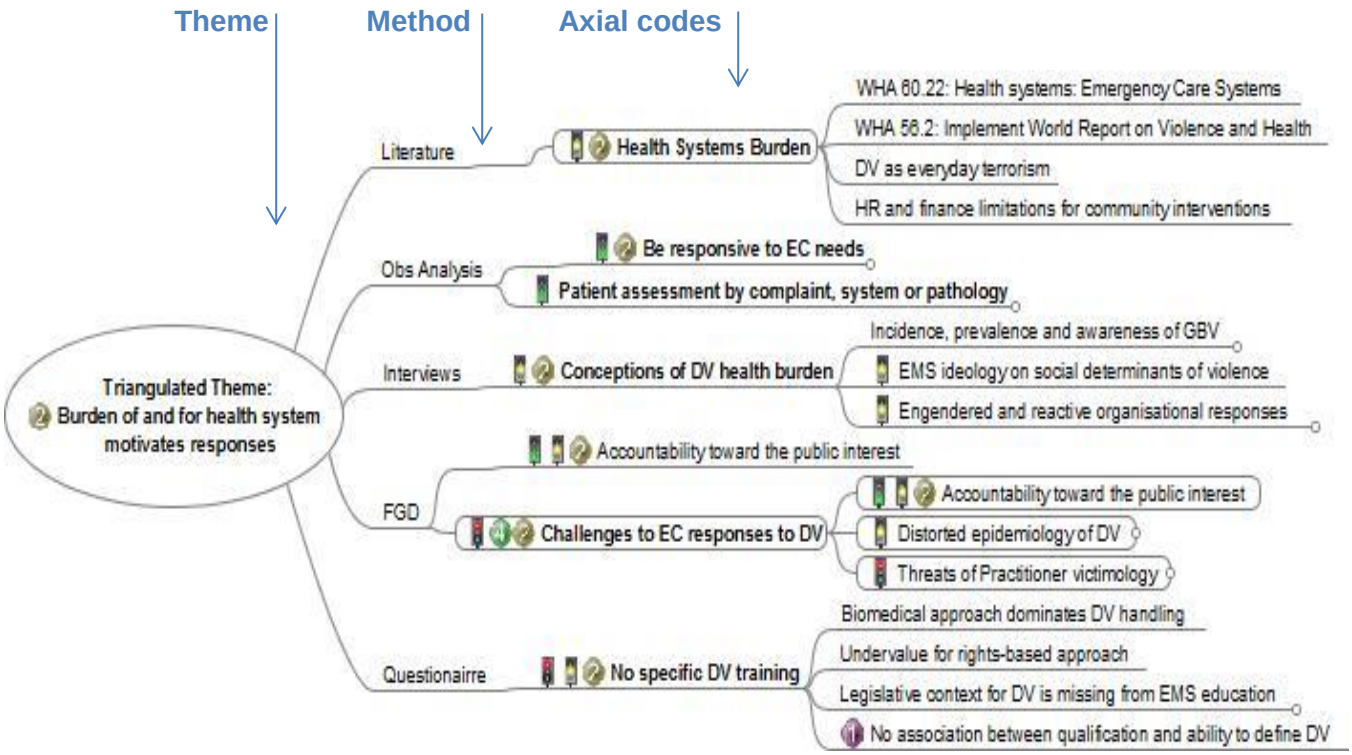
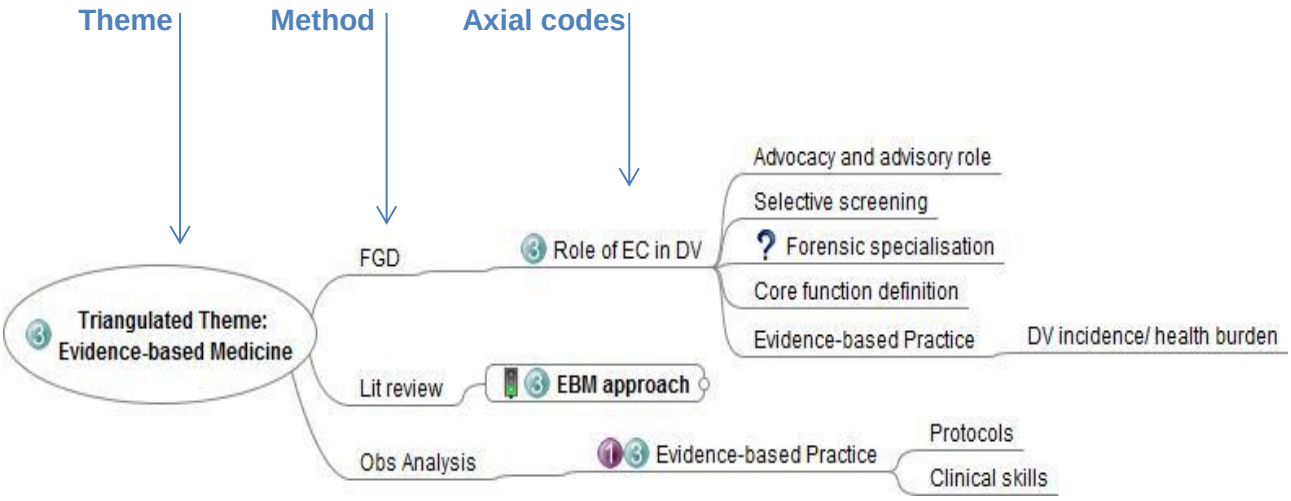


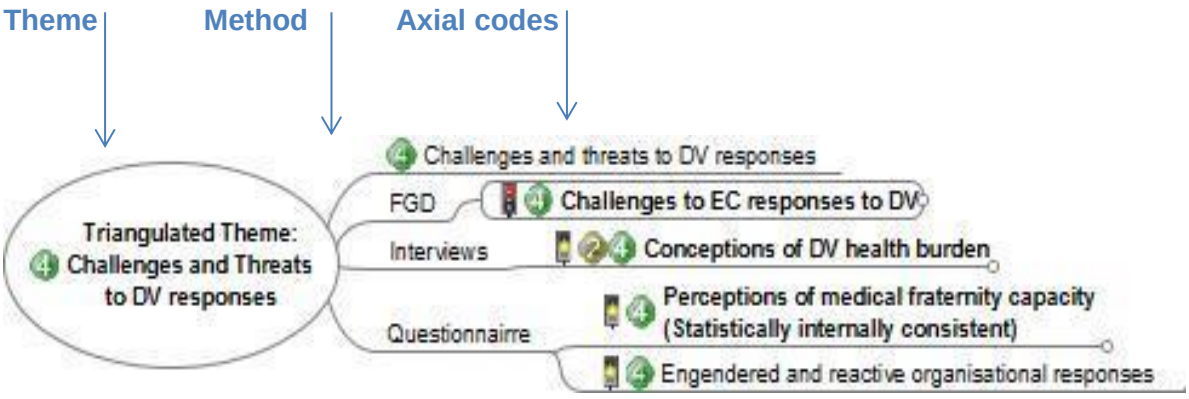
Figure 26: Triangulated Theme 3: Evidence-based Medicine should guide EC responses to DV



Theme 4: EC challenges and threats to DV responses require organisational and ideological change (Figure 27)

Interviews highlighted that conceptions of DV affect how one perceives the health burden of DV. The FGDs were outspoken on the many challenges to EC responses. The pilot survey found engendered responses from the EMS and pointed out the capacity limitations of health care in RSA.

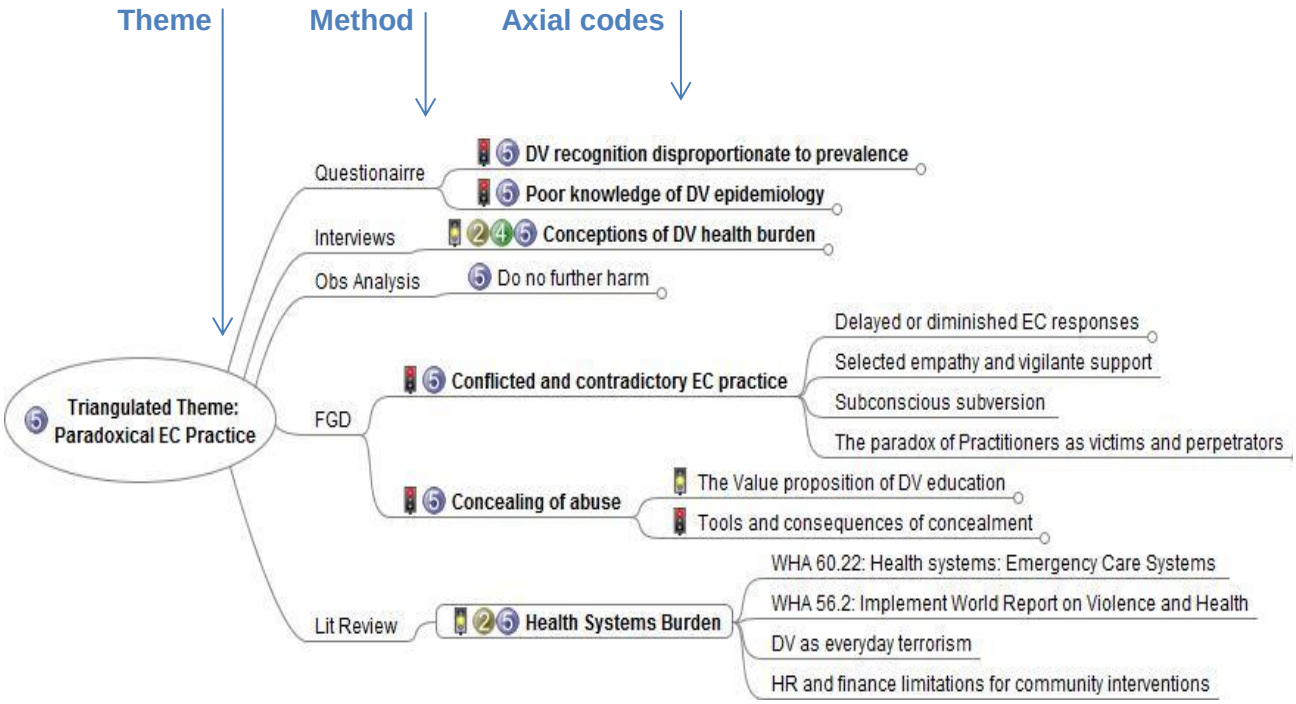
Figure 27: Triangulated Theme 4: EC challenges and threats to DV responses require organisational and ideological change



Theme 5: There exists paradoxical EC practice relative to the behavioural pathology of DV (Figure 28)

Paradoxical practice refers to practices opposite to what is expected. An example of this is promoting danger and risk by violating confidentiality instead of protecting the rights of the DV patient. The triangulation was led by the FGDs and pilot survey (describing practice as conflicted, contradictory and disproportionate).

Figure 28: Triangulated Theme 5: There exists paradoxical EC practice relative to the behavioural pathology of DV

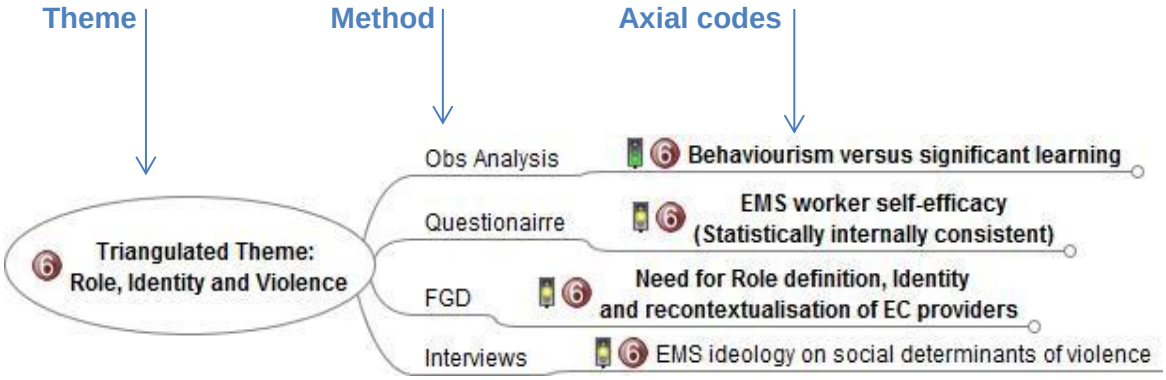


Theme 6: The EC discipline is in need of role definition, identity and violence re-contextualisation (Figure 29)

The FGDs reported on this theme, but it was the interviews that suggested the value of shaping identity and re-orienting EC by foregrounding the social determinants of violence. The pilot questionnaire supported the notion of re-visioning roles as it documented EC providers' self-efficacy to be low in the context of DV response. The N-PO found the conditioning of the behaviourist-oriented simulations to be counter-productive to role

enhancement. There was a need for greater significance in the learning, in the form of social constructivism.

Figure 29: Triangulated Theme 6: The EC discipline is in need of role definition, identity and violence re-contextualisation



The data collection methods contributed to data, theoretical and methodological triangulation (Bryman, 2003). In the questionnaire survey, data triangulation may be claimed as the survey was conducted through several sampling strategies over six months so as to slice data at different times, places and variety of participants. The EiDM results, as secondary data, sampled data from a range of sources. The interviews included three senior HPCSA participants and four EMS managers (2 in operations and 2 in education). Theoretical triangulation, "which refers to the use of more than one theoretical position in interpreting data" (Bryman, 2003) was inevitable given the richness of diversity and depth of the data. Perhaps the strongest claim to convergent validity is due to methodological triangulation, given the many methods of gathering data. Some themes may accrue to more than one theoretical proposition.

Similar themes/codes were regrouped into broad categories of risk to the practitioner or patient (using the red traffic light image that is a feature of FreeMind® software). Any practitioner, patient or EMS system need or deficiency was highlighted using the amber traffic light image. Any theme related to responses/actions by the practitioner, EMS or health system was denoted using the green traffic light image. This is of later relevance for the theoretical frame of the findings. The mind-maps have been abstracted toward

theoretical constructs and propositions and are presented sequentially. To demonstrate the notion of convergent validity, the methods (detailed in Chapter 3) and axial codes (introduced in Chapter 4) are indicated in the mind-maps.

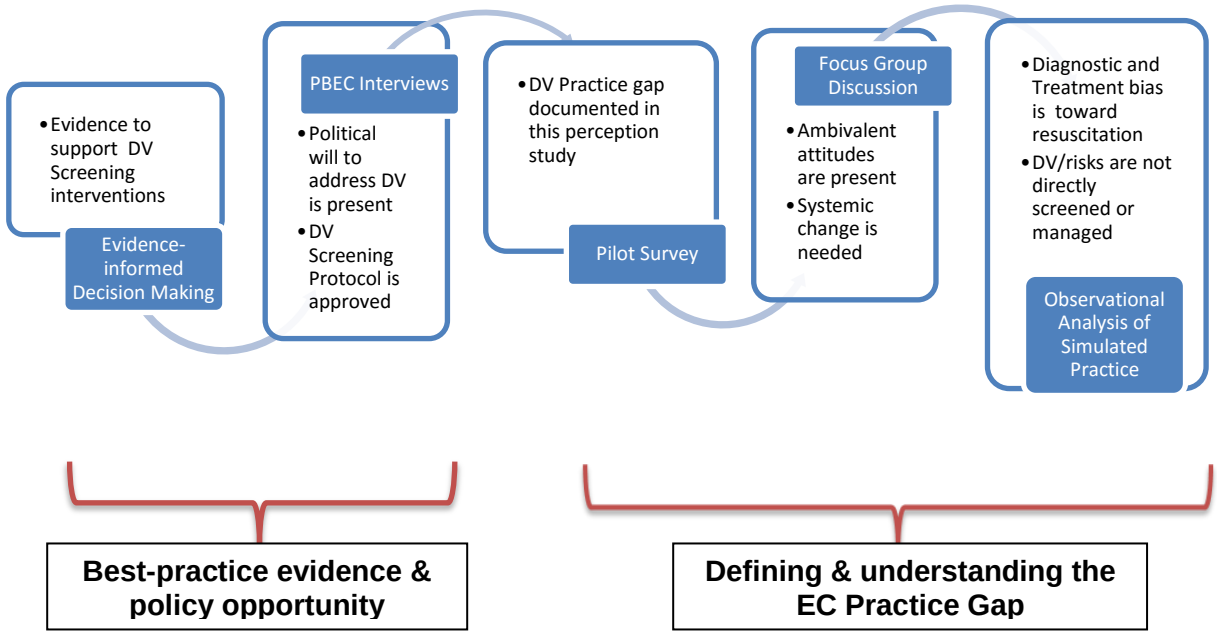
The basis for substantive theory building (theoretical analysis) in Chapter 6 can be seen from the methodological triangulation of the six major themes above. All themes find direct expression in all of the data collection instruments. This 'within-method' and 'between-method' triangulation (Bryman, 2003) enhances the confidence that the results may derive generalisation toward theoretical propositions through inductive and deductive logic.

4.6 Phase I Summary and Emergence of the Phase II Question

The triangulated themes from Phase I findings are necessary and relatively sufficient to define the status quo, propose desired best practice and an estimate the EC practice-gap with respect to DV. The themes inform and precede the (hitherto tentative) methods and data sources of Phase II.

Figure 30 shows key preliminary findings in relation to best practice/policy opportunity for prehospital DV responses and a practice gap appraisal. For the operational question: what is the evidence for prehospital EC roles in DV prevention, a systematic synthesis of literature, in the form of evidence-informed decision making (EiDM) summarised the empirical evidence of the feasibility and value proposition of DV screening in the prehospital environment. In response to the question: What is the regulatory landscape for DV prevention; interviews with the HPCSA power-brokers documented that there is a political will to respond to GBV using regulatory mechanisms. A country-wide DV screening protocol is now HPCSA-approved but is not yet implemented in EMS organisations. The implementation of the screening protocol presents an opportunity for practice change to address an unmet need in EMS. As implementing a DV screening protocol would first require a practice gap analysis, a pilot perception study, focus group discussions and observations of simulated practice was conducted.

Figure 30: Phase I overview: Best practice/policy opportunity and practice gap appraisal for prehospital DV responses



The findings from self-administered questionnaires quantitatively document a practice gap in EMS with regards to knowledge, attitude, beliefs and practice in relation to DV cases in the prehospital milieu. An analysis of Focus Group Discussions note ambivalent attitudes and the need for systemic change. They also corroborated survey findings. In observing simulated practice, the absence of routine DV screening, risk assessment, referral or clinical case finding is observed. There is an observed diagnostic and treatment bias toward resuscitation. Data from all of these methods were organised into descriptive and then interpretive codes. Table 14 provides the preliminary findings, research opportunities and alignment to the research objectives. Converging the interpretive (axial) codes led to the emergence of six patterns/themes (in 4.5 above) that serve as the preliminary Phase I findings. The emergent themes, post methodological triangulation, are derived from the data. They define the point at which data saturation was reached. Due to the mutually inclusive nature of these themes, they will be discussed from categories of integrated and abstracted theoretical perspectives. They are informed by the current practice, have implications for future practice and align with study objectives (Table 14):

Theme 1: Prehospital screening for DV (DV) is acceptable and effective. There is no uniformity of current DV responses in EMS (i.e. in relation to DV sensitive-quality standards). The opportunity is to implement a uniform approach in teaching and practice of the EC case for the purpose of early detection. This aligns with specific objective i. critically appraise and synthesize the best clinical practice. This may enable practitioner sensitisation and early detection of DV as a presenting complaint or co-morbidity. Philosophical repositioning would enable a strategic shift toward early detection (secondary prevention) as a means to reduce the costly burden of need for tertiary/EC interventions (Theme 2).

Theme 2: The burden of DV motivates EC (EC) bio-psycho-social responses. The EMS approach is found to be reactive and narrowly constructed as it is activated *post-facto*. The opportunity is to shift toward early detection (secondary prevention) as a means to reduce the burden of need for tertiary care interventions. This finding also aligns to objective i. Evaluate the current clinical practice of GBV intervention.

Theme 3: EC responses to DV should be guided by Evidence-based Medicine. The finding is that ambivalent attitudes and indifference impacts on health equity and quality of care. The implication is that education and practice must foreground EC relatedness of DV, the danger of secondary victimisation by EMS and the epidemiological value of screening. Objective iv relates: Improve educational/regulatory policy and clinical practice through the generation of evidence-informed recommendations.

Theme 4: EC challenges and threats to DV responses require organisational and ideological change. Phase I finds that EMS education also has a biomedical lens and a focus on resuscitation. This promotes the implementation of a curriculum that is DV sensitive and applies a bio-psycho-social model. After all, exposure to violence is both a cause of injury and a social determinant of health. This has meaning for objective iii: evaluate the ideological assumptions/ perspectives of EC practitioners, educators and the profession specific regulator.

Theme 5: There exists paradoxical EC practice relative to the behavioural pathology of DV. There is a reported insufficient awareness of rights and recognition of problem of DV among practitioners (and patients). The probable response should be to provide advocacy and response training to practitioners on rights and obligations to DV cases. The risk of secondary victimisation by EMS, by violation of confidentiality or disbelieving victims, must be mitigated by sensitive staff and adherence to the patient rights charter. This answers objective iii in part: Evaluate the current clinical practice of GBV intervention.

Theme 6: The EC discipline is in need of role definition, identity and violence re-contextualisation. The study finds that EMS, as a health providing entity may be systematically missing DV cases. In so doing, EMS may contribute to the burden of unmet (DV response) need. The HPCSA has approved a screening guideline (Annexure 1), but it is yet to be implemented. The opportunity is to determine if implementation of a DV screening tool improves DV detection and referral rates. The epidemiological value of screening should be tested. Surveillance for DV cases in EMS should be championed. This contributes to objectives: iii. Evaluate the current clinical practice of GBV intervention by EC practitioners within an emergency medical system; iv. Improve educational, regulatory, policy and clinical practice through the generation of evidence-informed recommendations and v. Develop an original theoretical analysis.

Whilst Phase I results suggests EMSs value screening and safety assessment, the qualitative methods employed cannot determine if implementation of a DV screening tool improves DV detection and referral rates in the prehospital environment. That constituted the primary outcomes for the (quasi-experimental) cohort study of Phase II. Whilst screening for DV in health facilities has not yielded improved health outcomes, those findings are not directly extrapolated to the prehospital arena. EMS clinical endpoints are narrower as the EMS does not admit patients unto itself (although it may discharge in the prehospital setting). DV case detection, risk stratification and sentinel surveillance have the potential to be public health and forensic medicine measures of EMS effectiveness, but there is no South African evidence of this. Where femicide or child fatality from abuse has occurred, the EMS response has implications for forensic pathology and criminal justice.

Table 14: Phase I Findings, current EMS responses and corresponding opportunities to enhance EC responses and alignment to objectives

Phase I Findings	Current EMS response to DV	Opportunity to enhance EMS responses	Alignment to specific research objectives
Theme 1: Prehospital screening for DV (DV) is acceptable and effective	There is no uniformity of current DV responses in EMS (i.e. DV sensitive-quality standards).	Implement a uniform approach in teaching and practice of the EC case for the purpose of early detection.	i. Critically appraise and synthesize the best clinical practice
Theme 2: The burden of DV motivates EC (EC) bio-psycho-social responses	The EMS modus operandi is reactive and narrowly constructed as it is activated post-facto.	Shift toward early detection (secondary prevention) as a means to reduce the burden of need for tertiary care interventions.	ii. Evaluate the current clinical practice of GBV intervention…
Theme 3: EC responses to DV should be guided by Evidence-based Medicine	Ambivalent attitudes and indifference impacts on health equity and quality of care.	Education and practice must foreground EC relatedness of DV, the danger of secondary victimisation by EMS and the epidemiological value of screening.	iv. Improve educational/regulatory policy and clinical practice through the generation of evidence-informed recommendations…
Theme 4: EC challenges and threats to DV responses require organisational and ideological change	EMS Education also has a biomedical lens and a focus on resuscitation.	Implement a curriculum that is DV sensitive and applies a bio-psycho-social model. Exposure to violence is both a cause of injury and a social determinant of health.	iii. evaluate the ideological assumptions/ perspectives of EC practitioners, educators and the profession specific regulator …
Theme 5: There exists paradoxical EC practice relative to the behavioural pathology of DV	There is a reported insufficient awareness of rights and recognition of problem of DV among practitioners (and patients).	Provide advocacy and response training to practitioners on rights and obligations to DV cases.	iii. Evaluate the current clinical practice of GBV intervention…
Theme 6: The EC discipline is in need of role definition, identity and violence re-contextualisation.	EMS, as a health providing entity may be systematically missing DV cases. In so doing, EMS may contribute to the burden of unmet (DV intervention) need.	The HPCSA has approved a screening guideline (Annexure 1), but it is yet to be implemented. Determine if implementation of a DV screening tool improves DV detection and referral rates.	iii. Evaluate the current clinical practice of GBV intervention by EC practitioners within an emergency medical system. iv. Improve educational, regulatory, policy and clinical practice through the generation of evidence-informed recommendations… v. Develop an original theoretical analysis

Theme Six was borne out of Phase I finding that EMS, as a health providing entity, may be systematically missing DV cases. In so doing, EMS may contribute to the burden of unmet (DV intervention) need (Table 14). As the HPCSA had approved a screening guideline that it had not implemented, it became prudent to determine if implementation of a DV screening tool improved DV detection and referral rates and to quantify the burden of unmet DV-EC need.

The cohort study of Phase II was then conceptualised to determine any probable causal inference between DV detection and referral and a DV screening intervention in a public EMS.

5 CHAPTER FIVE: PHASE II QUANTITATIVE RESULTS

The results from the pilot survey, survey of EMS clinicians and the cohort study are presented in that order. The key results are summarised at the end of the chapter in 5.6.

The quantitative questionnaire (with some open ended questions) was self-administered among all 345 (n) participants of the 12 DV screening training workshops[55] (of the cohort study) held for all the selected bases in the month of July 2016. The instrument aimed to document the current or past responsivity[56] of EC providers to DV by assessing their knowledge, attitudes, beliefs and practice claims about DV. Where respondents were asked to give a definition of DV in words, they were given a score from 0 to 4 depending on how many of the following four aspects of the definition they were able to provide, including 'No responses' (0), 'Who is affected' (1), plus 'What constitutes it' (2), plus 'Why does it occur' (3) plus 'How does it manifest' (4). The reference case definition was provided by the DV Act (Domestic Violence Act, Act 116 of 1998).

The cohort study compared DV detection and referral rates from historical data (archived medical records) with that from prospective screening forms. The implementation of screening was an intervention made possible by the development of a DV screening protocol and related reporting instruments and DV screening training for 5 of 14 randomly selected EMS bases in the WC EMS.

The analysis and terminology below aimed to *identify* the right technique by focusing on the problem objective and data type. Subsequently, steps to *compute* the statistics are provided followed by *interpretation* of the results in the context of the problem (Keller, 2012). Note that a 5% significance level was used for all hypothesis tests; hence the null hypothesis was rejected when the p-value was less than 0.05.

Summary tables for the cohort study results are provided in Annexure 23.

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[55] DV screening training and implementation of a DV screening protocol in EMS operations was the intervention in the cohort study. All those who attended the training (345) completed the questionnaire before the training commenced, to document prior knowledge. Only 329 completed the training.

[56] Responsivity is a measure of responsiveness.

5.1 Pilot Questionnaire Results (n = 141): DV Responsivity by EC

The questionnaire was piloted with senior EC students, EC educators and EC clinicians in HPCSA accredited sites in KwaZulu Natal (KZN) and in the Western Cape (WC)[57]. The pilot (n = 141) proved the value of the measurement instrument. The results are presented below. Data were captured and cleaned in Microsoft Excel. Statistical analysis was conducted using R Statistical Computing.

There was a probable low DV recognition (as little as one DV case in ten cases by 75.6% sampled), inconsistent with DV prevalence in the country. Despite (or perhaps because of) their limited exposure to DV cases, participants (n=124; 92.5%) acknowledged an under-reporting of DV incidents to the EMS. Reasons for under-reporting of DV to the EMS included: victims afraid to call for help; poor or no special handling of DV calls by EMS responders; the victim is ashamed to call for help; reporting was not seen as a priority by the victim and DV calls were not prioritized by the communications centre. All of these reasons appear to motivate a strategic rethink of the EC response to DV.

The index of DV-related myths in the questionnaire lacked statistical internal consistency, probably due to language and sample size limitations. The individual statements however reveal serious misconceptions and false beliefs about DV that prejudice victims of abuse that condone and excuse violence perpetration and do not promote inclusive ethical care bundles. An explanation of the above professional deficiencies is that the legislative context for DV intervention and prevention is missing from EMS education and does not find informal expression in EC practice.

The importance of DV intervention was seen only in terms of enabling support and acute care post-facto. Addressing root causes, appreciating the hidden nature of violence and avoiding EMS futility were other motivations. Half the respondents cited that DV detection was contingent on time and place of screening with lower socio-economic areas, weekend nights and alcohol use raising the index of suspicion for DV. Difficulty was experienced in diagnosing the history or presence of DV in routine calls, explained by the premise that victims were ashamed or afraid to admit abuse. There was no referral pattern or strategy reported. Communications centres did not play a meaningful role in the referral of DV

[57] The sample for the pilot was *ad hoc* and not determined scientifically. This is a key difference from the main survey of the EC providers in the WC that followed in the cohort study.

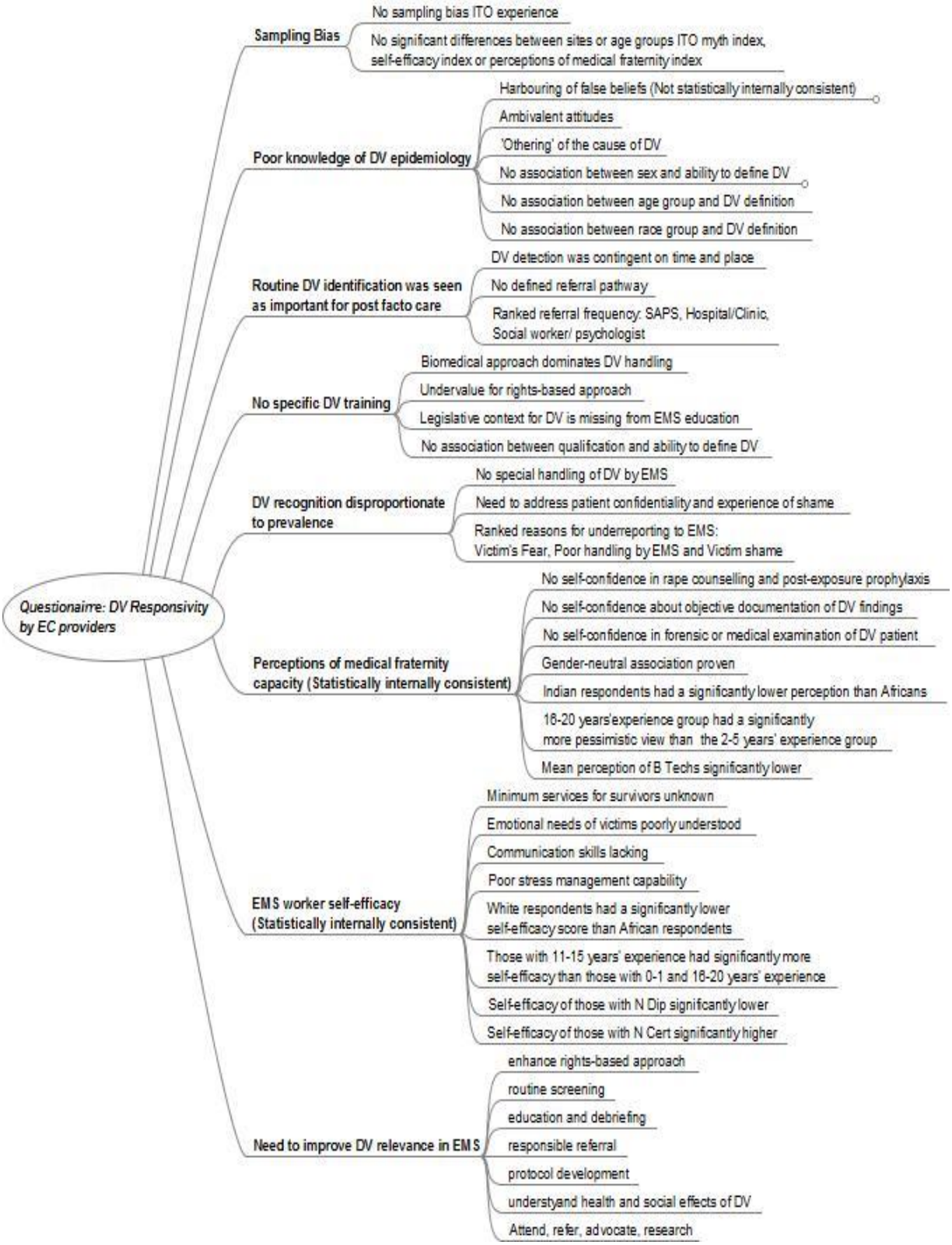
victims. Respondents reported inadequate or no preparedness for DV handling, largely due to its absence from EMS education architecture. Substance abuse and/or inadequate coping mechanisms, poverty and a lack of education, a need for power and control, anxiety/stress/anger and childhood exposure to violence were reported as causes of DV.

Consistent with the deficiencies found in Phase I, participant recommendations for EMS to be more responsive to DV victims and survivors included education and debriefing of EMS personnel (n=77; 54.6%), responsible referrals/links (n=40; 28.4%) and protocol development (n=22; 15.6%). The EMS Worker Self-Efficacy Scale and the Perceptions of Medical Capacity Scale have been proven to be reliable as an internally consistent measure of self-efficacy and perceptions of capacity. Still, the findings from the pilot infer that there is a considerable structural absence of DV intervention across the spectrum of EC programmes highlighting deficiencies in the areas of GBV, DV crisis intervention and counselling, forensic assessment and medico-legal documentation, risk and presumptive treatment of pregnancy and sexually transmitted infections from sexual assault. Notwithstanding the above findings, most (n=85; 70.8%) believed that there was a need to enhance the DV relevance in EMS and staff should make conclusions and act responsibly based on their findings of abuse. The questionnaire was then implemented in Phase II (See 5.2.). The analysis from the pilot DV Responsivity Questionnaire was (Figure 31):

- The instrument was accessible across all demographic factors (no bias)
- There was poor knowledge of DV epidemiology. The Myth Index was not proven to be internally consistent.
- Routine DV identification was important for *post facto* care
- No specific DV training was had by EC providers
- DV recognition by EC providers was disproportionate to DV prevalence
- There were significantly poor perceptions of the medical capacity to respond to GBV (through self-appraisal). The Perceptions of Medical Capacity Scale have been proven to be reliable as an internally consistent measure of perceptions of capacity.
- There is a need to improve DV relevance in EC

There was significantly poor self-efficacy for GBV response by EC providers. The EMS Worker Self-Efficacy Scale was proven in the pilot to be reliable as an internally consistent measure of self-efficacy. When the survey was self-administered among a larger sample (n = 345) of only operational EMS practitioners in the WC EMS, the main findings bulleted above were re-affirmed.

Figure 31: Analysis emerging from the Pilot DV Responsivity questionnaire



5.2 Survey of EC Providers in the Cohort Study (n = 345)

The pilot sample results discussed above was not included in the analysis of the survey conducted in the cohort study as the intention was to enable a thorough contextualization of the cohort study. Consequently, all participants of the training session for the cohort study were invited to participate in the survey (Annexure 2). The sample size was n = 345 (although those that met the cohort study inclusion criteria numbered 329). The results in summary tables appear in Annexure 23.

With respect to the questionnaire sampling, another Monte Carlo simulation was conducted retroactively[58] using only the sample sizes actually implemented, i.e. two urban, two rural and one 'peri-urban' base. The standard error for estimating a proportion *p* equal to 0,5 using the clustered random sampling methodology and sample sizes actually implemented was found to be about 0,014, and the power for rejecting the null hypothesis that *p* = 0,5 when *p* is actually 0,45 (an effect size of 0,05) was found to be about 82%. Thus the sampling methodology and sample size used for the survey were found to be adequate.

Three multi-item scales were constructed out of sets of questions in the questionnaire. The 12 parts of question 13 were grouped into a single score between 0 and 24 representing the respondent's level of belief in myths about DV. Using Cronbach's alpha, the scale as currently constructed, cannot serve as an internally consistent measurement of an EMS worker's level of belief in myths about DV. The second multi-item scale is based on questions 36-40 and measures an EMS worker's self-efficacy for dealing with DV cases. The third multi-item scale is based on questions 41-45 and measures an EMS worker's perception of the medical capacity for dealing with DV cases. The Cronbach's alpha statistics for the latter two implies that these two scales do provide internally consistent measurements of the quantities they seek to measure. Annexure 8 provides further details on these scales.

[58] This implies that the adequacy of the sampling methodology and sample size was operative in relation to the relevant sampling that pre-dated the Monte Carlo simulation.

5.2.1 Sex

There were n = 189 (54.8%) males who participated in the survey. One-way analysis of variance (ANOVA) was used to test the null hypothesis that the mean myth index score was the same for male and female respondents against the alternative that the mean myth index score was different between males and females. The null hypothesis (p-value = 0,021) was rejected and it is concluded that there is a significant difference in mean myth index score between males and females. Specifically, males had a higher mean myth index score than females on average by 0,75 units on this scale from 0 to 24. Male EMS workers appear more likely than female EMS workers, on average, to believe myths about DV. This finding led to inquiry into the relationship between the practitioner sex and DV detection.

Using ANOVA no difference was found in mean self-efficacy between males and females (p-values = 0.747). No difference in mean perception of the medical capacity between males and females was found (p-value = 0,0527, so the decision is marginal). The chi-squared test for independence was used to assess whether there is an association between sex and a respondent's ability to define DV (scored from 0 to 4). ANOVA could not be used in this instance because the DV score does not approximately follow a normal distribution. The chi-squared test for independence did not detect any association between sex and ability to define DV (p-value = 0,114). This indicates that efforts to improve DV knowledge among EC providers must target both men and women, with an emphasis on debunking male myths.

5.2.2 Site

Using the ANOVA method, significant differences were found between different sites in terms of myth index (p-value = 0.018). Specifically, Site 3 (WC EMS Operations) had a significantly higher mean myth index score than Site 5 (CPUT EMS [Tukey HSD test p-value = 0,017]). No significant differences between different sites were identified in terms of self-efficacy for dealing with DV (p-value = 0,061). Significant differences between different sites *were* identified in terms of perceptions of the medical capacity for dealing with DV (p-value = 0,014). Site 3 (WC EMS Operations) had higher perceptions than Site 5 (CPUT EMS) [Tukey HSD test p-value = 0,015]. If belief in myths correlated with less detection, then that might explain gross differences in detection among bases. It is interesting that WC EMS operations held beliefs in myths, yet held a higher perception of the medical capacity

response to DV when compared to clinical instructors. This may have a potentially *confounding* effect on EMS criticism and a *compounding* effect on DV responses when belief in myths is held with simultaneous belief in the medical capacity response to DV.

5.2.3 Age Group

Using the ANOVA method, no differences were found between age groups in terms of myth index (p-value = 0,24). However, there were significant differences in mean self-efficacy index (p-value = 0,0022). More specifically, the 35-39 age group reported significantly higher mean self-efficacy scores than either the lowest age category (<25; Tukey HSD p-value = 0,025) or the 30-34 age group (Tukey HSD p-value = 0,0039). A notable difference in mean perceptions of medical capacity index score was also found across age groups (ANOVA p-value = 0,044). Specifically, the 35-39 age group reported significantly higher mean perceptions of medical capacity index score than the ≥ 45 age group (Tukey HSD p-value = 0,014). The Pearson chi-squared test for independence could not be used to compare site with DV definition scores because of low expected cell counts in the contingency table. To enable comparison between DV definition scores and age groups the DV definition scores of 3 and 4 were combined into a single category (since the expected counts for the score of 4 were too small to meet the assumptions of the test). The <25 and 25-29 age categories were also combined for the same reason. The chi-squared test for independence found no evidence of an association between age group and DV definition score (p-value = 0,27). That older more experienced practitioners or younger, recently trained practitioners might be associated with higher DV definition, higher self-efficacy, fewer myths or confidence in the medical capacity are expectations that are not upheld.

5.2.4 Race Groups[59]

Using the ANOVA method, significant differences were found between race groups in terms of myth index (p-value = 0,0028), self-efficacy index (p-value = $1{,}24 \times 10^{-5}$) and perceptions of medical capacity index (p-value = $1{,}54 \times 10^{-11}$). Tukey's Test was used for *post hoc*

[59] Analysis of race was approved in the ethics application as being relevant for the potential of redress. As respondents self-identify, the race classification is not imposed. The cohort study results inform on whether a practitioner's racialized identity is associated with DV detection or referral.

comparison to identify which race groups differed in each case. In mean scores for myth index, respondents identifying as Coloured or White had lower myth scores than respondents identifying as Black African, suggesting that myths about DV are more prevalent among Black Africans. There were no significant differences among Indians, Whites and Coloured participants, or between Africans and Indians.

In mean scores for self-efficacy index, self-identifying African respondents scored higher than self-identifying Coloured and White respondents. There were no significant differences among Indians, Whites and Coloureds, or between Africans and Indians. In mean scores for perceptions of medical capacity index, self-identifying African respondents scored highest—significantly higher than each of the other race groups. There were no differences among Indians, Whites and Coloureds.

In order to compare ability to define DV between race groups, the White and Indian categories were excluded since the expected counts were too small to reliably use the chi-squared test for independence. The p-value of the chi-squared test was 0.032, implying a relationship exists between race category and ability to define DV. Specifically, it appears that the results were more varied among self-identifying Africans than self-identifying Coloureds. While the majority of Coloureds scored 1 or 2, the majority of African respondents scored either at the lower extreme (42 0's) or the higher extreme (45 3's and 4's).

5.2.5 EMS Experience

Using the ANOVA method, no differences were found between levels of EMS experience in terms of myth index (p-value = 0,74) or self-efficacy for handling DV cases (ANOVA p-value = 0,045, but Tukey HSD test did not yield any p-values below 0,05). There were, however, significant differences between experience levels in terms of mean perceptions of medical capacity index (p-value = 0,0058). Tukey's Test was used for *post hoc* comparison to identify which experience levels differed in terms of mean perceptions of medical capacity score. Participants with 2-5 years' experience had a more optimistic view of the medical's to cope with DV than those 11-15 years' experience (Tukey HSD p-value = 0,011) or 20+ years' experience (Tukey HSD p-value = 0,022).

The Pearson chi-squared test for independence identified an association between ability to define DV and level of experience (p-value = 0,018). The DV definition scores of 3 and 4 were combined into one category to meet the test assumptions, and the experience levels 0-1 years and 2-5 years also were combined. It appears that in general, those with *less* experience tended to score higher than those with *more*. Most participants (n = 95) had 2-5 years' EMS related experience.

Because an individual respondent could have more than one qualification, only an ANOVA was used to compare those who do have a particular qualification with those who do not. There were n = 292 BAA[60] qualified participants (84,64%). Participants with BAA had a significantly *higher* myth score than those who did not (ANOVA p-value = 0,0010). Those with a BTech EMC had a significantly *lower* myth score than those who did not (ANOVA p-value = 0,0078). For the other qualifications there was no significant difference in mean myth index between those who had the qualification and those who did not. The BTech in EMC qualification appears to be the most effective in dispelling myths about DV, while the BAA appears to be the least effective. Those who had *none* of the listed qualifications had a significantly lower mean myth index than those who had at least one of the listed qualifications (ANOVA p-value = 0,021).

With respect to self-efficacy index for dealing with DV, those with BAA qualification have a significantly *higher* self-efficacy than those who do not (ANOVA p-value = 0,017). Those with AEA qualification have a significantly *lower* self-efficacy than those who do not (ANOVA p-value = 0,015), as do those with CCA qualification (ANOVA p-value = 0,0056). For other qualifications there is no significant difference in self-efficacy score between those who have the qualification and those who do not.

The results are similar with regards to perceptions of medical capacity index. Those with BAA qualification have a significantly *higher* score than those who do not (ANOVA p-value = 0,0020), while those with AEA qualification (ANOVA p-value = 0,00065), CCA (0,014) and BTech in EMC (p-value = 0,0018) have lower average 'perceptions of medical capacity index scores than those who do not have these respective qualifications. Comparing ability to define DV for those who possess each qualification to those who lack it, the chi-squared test for independence was used. No association was found between DV definition score

[60] BAA is the lowest level of qualifications and scope and is in the category "supervised practice".

and possession of BAA qualification (p-value = 0,096) or between DV definition score and possession of AEA qualification (p-value = 0,58). (Note: no comparison could be made for CCA, NDip in EMC, NCert in EMC or BTech in EMC, due to low expected frequencies).

5.2.6 Self-estimated DV Exposure

ANOVA identified no significant differences in mean myth index (p-value = 0,56), in mean self-efficacy index (p-value = 0,066) or in mean perceptions of medical capacity index (p-value = 0,13) between different frequency of general calls in the past month. The Pearson chi-squared test for independence was used to analyse the relationship between frequency of general calls in the past month and ability to define DV. After combining DV definition scores 3 and 4 into one category to achieve an acceptable expected count, the test was run and identified that an association does exist (p-value = 0,015). It appears that *higher* scores are relatively more frequent amongst those who attended a *lower* frequency of general calls. In a distribution of self-appraised DV detection estimates for the preceding month, fifty three (15,36%) claimed an estimation of 40-50%. When the preceding year is considered, n = 61 (17,68%) claimed a DV detection of 30-40%. This will be compared with the actual detection rates found in the cohort study.

5.3 Retrospective Cohort Descriptive Results[61]

5.3.1 Distribution of Cases Sampled

The data collection period spanned 12 weeks (22 July-14 October 2015). Each 12-hour shift (across all bases, day or night) was considered a single cluster. Of a total of 170 clusters, 30 clusters were randomly sampled. In real terms, **3,633** cases (N) were sampled of **7,861** cases screened (i.e. 4,228 cases of males and females <14 years old were excluded). Of the five bases included in the study Pinelands base and Khayelitsha base had the most cases sampled (n = 1,690; n = 1,124 respectively). Most cases (n = 1,847; 50,84%) were sampled from dayshift calls[62] (7am-7pm), whilst 1786 were from the

[61] See Annexure 23 for summary tables.

[62] This is indicative of a higher dayshift caseload.

nightshift (7pm-7am). There were 3,135 (86,29%) female cases and 487 (13,4%) men[63]. The age groups 20-29 (n = 1,182; 32,54%) and 30-39 (n = 773; 21,28%) were the age categories most sampled. Most patients were attended to by Basic qualified EC providers (n = 1,825; 50,24%), followed by Intermediate (AEA) EC providers (n = 1,444; 39,75%) and Advanced EC providers (n = 288; 7,93%) who often attend a call at the request of basic and intermediate EC providers when the patient needs exceed their clinical scope.

5.3.2 Description of the Presenting Complaint

The most frequent complaint (coded by the EMS) was 'Other medical'. This is a general category for patients who do not fit one of the other codes. The three other major burdens were 'Assault' (n = 578; 15,91%), 'Maternity' (n = 452; 12,44%) and 'Inter-hospital transfers' (n = 369; 10,16%). Twenty one (n = 21) 'Shootings' and 21 (n) 'Burns' was documented; the contexts for both were unknown. There was one rape case sampled. Eight cases were 'Domestic Accidents', the definition for which is open to practitioner interpretation.

Noteworthy was that there were 30 cases of drug overdose. With the exception of inter-hospital transfers, all of these coding have the potential to be associated with DV cases, although only 25 cases made direct reference to the provisional diagnosis history or management of DV or child abuse. In all cases where the alleged perpetrator of interpersonal violence was identified, 12 were intimate partners, one was a spouse and one was a family member; and in 6 cases strangers were involved.

5.3.3 South African Triage Scale

In terms of the triage coding (sorting) of cases to determine a dispatch priority, 1,462 (40,24%) cases were coded 'Red' or 'Orange' (classified as 'Emergency') and 2,152 (59,23%) cases were 'Yellow' (classified as 'Urgent'). Only 20 (0.55%) cases reported a police presence at the scene. This differed considerably from the triage on scene and triage at destination (receiving health facility). It seems that the EMS is dealing with a large burden of non-emergencies ('Green Codes').

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[63] Given the selective sampling, this is of interest.

5.3.4 Injury Descriptions

Lacerations were documented in 272 (7,49%) cases, with 69 (1,9%) swellings and 26 (n) abrasions. The frequency of injury description does not align (too low) with the frequency of trauma-related cases, implying incomplete reporting or poor clinical assessment. Most injuries were located on the head (n = 185; 5,09%) and front torso (n= =161; 4,43). A total of 1,954 cases were referred to the ED. Only 2 police referrals, 4 clinic and 1 NGO referral were documented. Whilst the ED referrals are unexpectantly high, given the high rate of 'Green Codes' the absence of other referrals are of interest.

5.3.5 Complaint History

It is abundantly clear that the EMS does not document DV as a chief complaint. Surgical history, cerebrovascular accident (CVA), hypertension (HPT), and poor subjective health may be symptomatic of DV but the medical records do not obligate or enable the documentation of DV detection. This constitutes a structural deficiency for DV documentation.

The narrow conception of emergency to mean threats to one's airway, breathing or circulation, has led to the PRF recording management interventions in terms of airway, breathing and circulation. Any other management, for example: DV interventions may be noted under miscellaneous, with the practitioner discretion to explain further. This discretion is not commonly exercised as indicated by the staggering 2,479 (68,24%) cases where no management is documented to have occurred. It is plausible that given the many non-emergency nature of patients attended to (n = 1,319) and deceased (n = 33), no emergency care was indicated, but for 1,127 cases the absence of any management remains unexplained.

5.4 Prospective Cohort Study Descriptive Results[64]

Of 453 (N) patients routinely asked (directly or indirectly) about abuse, 233 cases (51,43%) of DV were detected. In 194 (42,83%) cases detection was negative for DV and 26 (5,74%) were uncertain. Uncertainty in diagnosis was defined by the data collection instrument as "the patient does not disclose abuse but you [caregiver] suspect the presence/history of abuse".

Considering the DV screening method, for n = 140 cases screened (30,91%) direct questioning was used to elicit responses and in n = 89 cases (19,65%) indirect questioning methods were used with the *proviso* that both methods were employed in some individual cases.

5.4.1 Nature of the Chief Complaint for Cases Screened

The multitude of chief complaints, for which DV screening was implemented, suggests the tool may be implemented across both trauma and medical settings. "Assaults" (n = 124; 27,37%) [including 5 "shootings" and 7 cases of "rape"] and "gynaecology" emergencies (n = 63; 13,91%) were the most frequent contexts for DV screening. The categorisation of "assaults" is likely to mean penetrating (excluding gunshots) or blunt trauma. The assumption is that the assault resulted in an injury that was a real or perceived emergency, necessitating EMS activation. Whilst the high assault inclusion amongst those screened may be due to selective screening of what may be overt non-accidental injury (NAI), the screening of other case presentations is suggestive of non-selective screening, i.e. asking about abuse routinely.

5.4.2 Type of Abuse Encountered

Amongst the 233 (N) DV positive cases, 149 (66,82%) cases reported physical violence, followed by verbal abuse (n = 101; 45,29%), emotional abuse (n = 94; 42,15%) and psychological abuse (n = 48; 21,52%). The incidence of sexual abuse (n = 24; 10,76%) was almost as frequent as economic abuse (n = 23; 10,31%).

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[64] Annexure 23 provides the summary tables.

For 21 cases (9,55%), the type of abuse was omitted, in error or by inexperience in reporting. A particular feature of DV pathology, these abuses are not mutually exclusive. DV therefore, distinguishes itself from non-DV related interpersonal abuse by the cumulative experience of multiple abuses.

5.4.3 Action Taken in All Cases Following Disclosure, Non-disclosure, Denial or Suspicion of DV

Of the 233 (N) DV cases detected, participants reported having admitted n = 110 (49,33%) to a health care facility; provided information to n = 79 (35,43%); provided empathic support and information to n = 111 (49,78%); documented observations of scene, injury and DV history in n = 100 (44,84%) cases; n = 102 victims (45,74%) were informed of their rights, and for 37 (16,59%) victims of DV, evidence was protected.

The non-DV cases totalled 220 (N), and in 31 (14,09%) cases none of the above action was taken. Non-action by EC providers is likely to be in circumstances where the victim is unconscious, critically injured or where taking any of these actions may result in violent reprisals for patient and/or practitioner. The former requires a prioritisation of EC interventions that may be resuscitative in nature. The latter may occur from a real or perceived threat of violence. Given the pathology of DV, it is possible that some victims would refuse any care offered and be protective of the perpetrator.

In 77,92% (n = 353) of cases screened, there was *no uncertainty* by EC providers of DV determination. Where the diagnosis was uncertain (N = 100; 22,08%), information was provided (n = 46; 46%), the presenting pathology was treated (n =23; 23%) and/or the patient was referred to hospital (n =46; 46%). These actions appear protective where DV uncertainty prevails. Only 4 (n; 4%) were discharged on scene in the presence of uncertainty. As the right to EC is constitutionally protected, prehospital discharge occurs following the patients' refusal of ambulance transportation. In the interest of patient safety, contact information, and information on rights/legal remedies by the Women's Legal Centre was disseminated amongst those discharged. Of interest, 127 (57,73%) patients received information even when DV was not detected. This health information benefit to those not experiencing DV at the time of the screening is noteworthy.

The forensic role of EC providers where a crime is committed with negative health outcomes is evidenced by information dissemination including information on rights and legal remedies, prehospital discharge, emergency treatments, appropriate referrals to hospital, providing supportive care, defensible documentation of observations and history, and protection of evidence. The onus is on the EC provider to make a diagnostic determination about abuse by asking routinely and/or by selective case finding. These are not mutually exclusive as a patient who replies in the negative during routine screening may not be ready to disclose abuse but that should not preclude the clinician from concluding a subjective and objective medical assessment of presenting signs, symptoms and risk factors. In the study, of 220 (N; 48,57% of sample) where DV was not detected, 127 (57,73%) received information, 30 (13,64%) were discharged on scene, 96 (43,64%) received treatment for the presenting pathology, and 159 (72,27%) were referred to hospital. It would appear that the low discharge rate on scene, and the high referral rate to hospital, has the potential to limit any risk of non-action amongst false negative cases, particularly if enquiry into DV risk continues in the hospital environment.

5.4.4 Safety Assessment Following DV Detection

Where DV was detected, a safety assessment was conducted. A response in the affirmative to any of six questions on risk is suggestive of heightened danger. This warrants intervention or a criminal justice response (safety planning, seeking of a protection order or police intervention). Violence had increased in nature or frequency in the past year for 140 patients (60,09%) seen in the 12-week period. The observation that the perpetrator had made ‘death-threats’ (n = 86; 36,91%), has weapons (n= 78; 33,48%) and uses alcohol and drugs (n = 153; 65,67%) is concerning as the elements of motive, opportunity and means for violent offence is present. That 58 (24,89%) of those where DV was detected were afraid to go home is telling of the awareness of risk victims live with.

5.4.5 Referral Choices for All Patients Screened

Of those patients screened during the reporting period (N =453), 292 were referred; some had more than one referral. The hospital emergency department had the most referrals (242; 53,42%). This is hardly surprising given the need for continuity of EC and existing referral pathways. The police were referred in 59 cases (13,02%) and clinics saw 25

referrals (5,52%). NGO's and FBO's constituted the minority of referrals (3,97% and 2,21%) and is suggestive of a lack of uptake of the WHO multi-agency strategy or a lack of community resources for DV handling.

5.4.6 Aspect of DV Screening Found to be Challenging

When asked about what aspect of the DV screening was found to be challenging, in 39 cases (8,61%), practitioners reported experiencing difficulty in referring victims. A notable challenge was asking about DV directly (n = 179; 39,51%), compared to only 16,34% (n = 74) that found indirect questioning challenging. Documenting the case (n = 45; 9,93%) and conducting a safety assessment (n = 28; 6,18%) was the least frequently challenging.

5.4.7 Age and DV Exposure of EMS Patients

The skewed gender distribution of the data reflects a deliberate practice: routine asking of all females but only selectively asking males (when suspected). This resulted in 50 males (11,04%) being selectively screened. There were no cases reported on less than 12 years of age. There were 53 cases of patients between 12-19 years and 145 were in the 20-29 age category. In 32 cases patients were over 60 years of age. The EMS responds to all patients across the lifespan. Ninety-eight (21,63%) had experienced a previous DV-related injury that required health care. This proportion may represent historically missed DV cases (as there was no routine screening implemented) from physical injury and perhaps an unmet need. This is of concern as NAI is a red flag for battering. Many patients (n = 102; 22,52%) reported sustaining a previous DV-related injury without reporting it to the EMS. This is suggestive of a lack of confidence in the EMS to respond to DV cases or of an unclear value proposition of EMS in DV cases. This notion is supported by the observation that only 26,49% (n = 120) of patients screened believed EMS should screen for DV. The majority (n = 333; 73,51%) did not believe EMS should screen for DV.

In 30 cases (6.62%), a DV protection order was already attained. In 44 (9.71%) cases telephonic advice on rights and services was requested; 409 (90.29%) did not. Yet, in almost half the cases of DV detection (n = 110; 49,33%) this was a first time disclosure of abuse to the health system. Whilst it is unknown if these patients would have disclosed

abuse to other health workers; the notion of EMS workers opening the door to the health system is now documented. Of those cases that disclosed the period of abuse (n = 127), 55 were less than 2 years, 31 were 2-5 years, 17 were 5-10 years and 11 were greater than 15 years.

5.4.8 Alleged Perpetrator Demographics

The alleged perpetrator's age was documented in 198 (N) instances. Most (n = 64; 32,32%) were 30-39 years of age whilst the fewest alleged perpetrators were in the 12-19 (n = 7) and 60+ (n = 6) age groups. In terms of race, most alleged perpetrators were 'Coloured' (n = 106; 53,54%) or 'Black African' (n = 86; 43,43%). In 23 cases (11,62%), the alleged perpetrator was female, but 161 (81,31%) cases were male.

5.4.9 Self-evaluation of DV Screening Training

When asked to appraise to what extent the training had prepared the EC provider for screening of individual cases, in 109 (24,06%) cases, the training had prepared them extremely well; in 135 (29,8%) cases they were mostly prepared and in 47 (10,38%) cases they were somewhat prepared. Uncertainty prevailed in 14 (3,09%) cases and 19 (4,19%) cases proved challenging to the extent that the training had not prepared them at all.

5.5 Cohort Study Analytical Results[65]

Analytical methods included: Pearson chi-squared test for independence, logistic regression (together with odds ratios), and 3D scatter plots for graphical representation to assist the analysis. Annexure 23 provides the summary tables. Annexure 24 provides technical detail of the analytical tests.

5.5.1 Retrospective DV Detection Rate

The retrospective data from 22 August to 14 October 2015, in which no DV screening tool was used After sampling of 30 clusters[66] (of 170 clusters) across all sampled EMS bases

[65] Annexure 23 provides the summary tables.

and capturing and cleaning of all eligible cases in these clusters, the total number of cases sampled was 3,633. DV was diagnosed and reflected on the patient form in just 25 cases, a rate of 0,00688 (or 0,688%). A comparison of DV detection in urban (Pinelands, Khayelitsha) vs. rural (Paarl, Worcester, Ceres) areas finds no relationship between the two (Pearson Chi-square p-value = 0,132). Few statistical analyses of relationships to DV detection can be performed in the retrospective data because of the very small number of detected cases. The empirical standard error from the Monte Carlo simulation (0,001750) was used, yielding an approximate 95% confidence interval for the detection rate of between 0,345% and 1,031%.

DV detection rate is defined as the proportion of EMS cases involving a female patient aged 14+ in which DV is diagnosed and recorded as such in medico-legal reports by the attending EC provider. Considering only females, DV was diagnosed and reflected on the patient form in just 16 out of 3,135 cases, a rate of 0,51%. We use the empirical standard error from the Monte Carlo simulation (0,001902), yielding an approximate 95% confidence interval for the detection rate between 0,138% and 0,883%.

5.5.2 Potential DV Cases in Retrospective Data

Since only 25 DV cases were detected out of a total of 3,633 in the retrospective data, the question arises whether it is possible to extrapolate/quantify the potential number of cases that might have been missed.

An estimated analysis of this issue is possible by using 'Complaint Presenting' as a proxy for DV risk, since certain complaints are more likely to be symptomatic of DV. These higher risk complaints were identified as Assault, Burns, Shooting, Rape, Domestic Accidents, Other Trauma, Overdose, and Other Medical.

Of the 25 cases actually diagnosed as DV, 22 presented as assault, two as 'Other Medical', and one as Infectious Disease. (This is a reminder that the proxy is not failsafe). The seven complaints identified as high risk comprised over two-thirds of all retrospective cases (2,486 of 3,633). It is plausible that of the 2,486 cases had been subjected to more rigorous DV screening, more cases may have been detected—though it is impossible to estimate how many.

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[66] A cluster is defined as all EMS medical records in a 12-hour shift.

5.5.3 Prospective DV Detection Rate

The prospective DV detection rate concerns specifically those EMS workers who underwent DV training and had the opportunity to implement the DV screening tool. Participants (n = 329; 66,06% of N = 498) were trained in DV screening from across the qualification spectrum in the EC profession: from basic qualified (BAA) participants (n = 224; 66,67%) to 4-year degree Practitioners (n = 52; 15,48%).

This population of workers largely overlaps with the population of workers reflected in the retrospective data, since the same bases were used and participation in the training was mandated by managers. However, the screening forms included in the 2016 data set do not represent a random sample from a population. Rather, they represent those screening forms that were voluntarily returned by participating EC providers—a self-selected sample. A total of 453 screening forms were returned by 75 unique EMS workers. Of these 403 pertained to female patients,[67] and of these 403, a positive DV diagnosis was made in 194 of 403 cases, a rate of 48,1%—extremely high! This may be partly due to the self-selected nature of the sample: EC providers are more likely to apply the DV screening tool where the nature of the case suggests the possibility of DV *prima facie,* and EC providers are more likely to return the DV screening tool in cases where DV was detected. Hence, on this assumption 403 clearly cannot function as the denominator for calculating the DV detection rate.

An alternative method is to construct a 'worst case scenario.' First, to assume that, for the 75 EMS workers who returned at least one screening form, DV was not detected in any other cases they saw during the period 22 July to 14 October 2016. (The exact number of cases they saw is unknown, but can be estimated based on overall incident numbers from the Western Cape EMS database.) Second, to assume that, for the 254 EMS workers who underwent DV training but did not return any DV screening forms[68], the DV detection rate

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[67] On the assumption that forms where gender was left blank indicated a female patient by default. The training emphasised the need to explicitly document male victims.

[68] 329-75=254. The 329 is adjusted from 336 because of a discrepancy between the EMS operational staff figures (supplied by Human Resources) and the training figures concerning the number of staff in Worcester (provided by operational management).

during the prospective 2016 period was the same as it was during the retrospective 2015 period (i.e. an estimated 0,510%).

For this method to work, estimates of the total number of eligible (female aged 14+) cases seen during the prospective 2016 period by all 443 staff at the five sampled bases, by the 329 *DV-trained* staff at the sampled bases, and by the 75 *DV-trained staff who returned screening forms* at the sampled bases was needed. The table below gives total responses (Emergency + Inter-facility transfers) for the five sampled bases during 22 July to 14 October 2016, from WC EMS Database (Table 15). These add up to 55,855. The estimated 41,02% eligibility rate (from the retrospective sample data, adjusted to include on females) was applied to estimate 25,945 *eligible* cases seen at all five bases. Given the number of operational staff at each base, the average number of eligible cases seen per operational staff member in each of the five bases can also be estimated.

Table 15: Estimation of eligible cases seen during the prospective 2016 period

Station	Total Cases 22/07/16-14/10/16 (excluding cancelled calls)	Total Female 14+ Cases	Total Staff	Eligible Cases per Staff member
Pinelands	25,252	10,608	202	52.51485149
Khayelitsha	16,058	6,746	145	46.52413793
Paarl	5,138	2,158	37	58.32432432
Worcester	4,881	2,051	31	66.16129032
Ceres	4,526	1,901	28	67.89285714
TOTAL	55,855	23,464	443	52.96613995

Since the number of *DV-trained* operational staff at each base and the number of *DV-trained operational staff who returned screening forms* at each base is known, these figures can be multiplied by the average number of eligible cases per staff member at the respective bases to obtain estimates for the number of eligible cases seen by these two sub-categories of staff (Table 16). Consequently, it is found that all DV-trained staff treated an estimated 17,373 eligible cases, while all DV-trained staff who returned screening forms treated an estimated 4,046 cases (23,3% of eligible cases).

Table 16: Estimates for the number of eligible cases seen by all participants enrolled and by those who returned screening forms

Station	Number of staff in study	Estimated Eligible cases seen by staff in study	Number of staff who returned screening forms	Estimated Eligible cases seen by staff who returned screening forms
Pinelands	106	5,567	19	998
Khayelitsha	145	6,746	31	1,442
Paarl	19	1,108	7	408
Worcester	31	2,051	14	926
Ceres	28	1,901	4	272
TOTAL	329	17,373	75	4,046

Applying the 'worst case scenario' rules, the minimalistic DV detection rate is calculated as follows:

$$\frac{194 + 0.00510 \times (17373 - 4046)}{17373} = 0.0151$$

Thus, even under the most stringent assumptions, the "post-intervention" DV detection rate among EMS workers who participated in the training is estimated at **1,51%.** Considering only the 75 EMS workers who returned screening forms, the estimated DV detection rate would be 194/4,046 **= 4,79%.**

5.5.4 Hypothesis Testing to Compare Retrospective DV Detection Rate to Prospective DV Detection Rate

Is there a statistically significant difference between the 'worst case scenario' post-intervention DV detection rate (estimated at 1,51%) and the pre-intervention DV detection rate (estimated at 0,510%)? This is answered by fixing 0.0151 as a constant (since it functions as a conservative 'lower bound' for the post-intervention DV detection rate) and implementing a test of the null hypothesis $p \geq 0.0151$ vs. the alternative $p < 0.0151$ (where p is the 2015 pre-intervention DV detection rate). The Monte Carlo simulation estimated the

standard error when p=0,015 to be 0.001902. Using that standard error, a test[69] using normal approximation was applied.

With a p-value of 7.28×10^{-8}, the null hypothesis can be confidently rejected and assert that p<0.0151; the DV detection rate before the intervention was less than the lowest reasonable value imputed to it after the intervention (among EMS workers who participated in the training). This is compelling evidence that the DV detection rate has increased after the intervention as compared to before. This technically does not demonstrate causality, but in the absence of any other plausible explanation for the increase besides the intervention, the intervention is likely to have caused it. The evidence is even more compelling if the null value is set to 0.0479 in order to test the null hypothesis that the DV detection rate in 2015 was less than 4.79% (the estimated rate among the 75 workers who returned screening forms). The p-value in this case is essentially 0.

All of this implies that applying the DV training and screening tool just as it was applied in the study may yield approximately a threefold increase in the DV detection rate (i.e. from 0.51% to 1.51%). If the DV training and screening tool are applied more rigorously—i.e. EMS workers are required to use the tool—then the increase in the DV detection rate is likely to be far greater (nine fold)[70], as suggested by the minimum 4,79% detection rate amongst the 75 individuals who implemented it and returned the DV screening tool.

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[69] The test statistic is:

$$Z_{\text{observed}} = \frac{\hat{p} - p_0}{SE(\hat{p})} = \frac{0.0051 - 0.0151}{0.001902} = -5.258$$

$$\Pr(Z < Z_{\text{observed}}) = \Pr(Z < -5.258) = 7.28 \times 10^{-8}$$

[70] 4,79/0,51 = 9,392

5.5.5 DV Diagnosis Rate in Cases from Retrospective Data vs. Self-reported Estimates from Practitioners in Questionnaires

From retrospective data:

- DV diagnosed in 16 out of 3135 female cases = 0.51% detection rate

From questionnaire data (self-reported):

- DV diagnosis rate was reported as percent. A weighted average of the percent's given is 32,2% (sample size of WC EMS workers surveyed, excluding non-responses, was 318).

A two-sample test for proportions yields a p-value < 0,0001, so the difference between these two proportions is clearly statistically significant. The self-reported rate of DV diagnosis appears to be far in excess of what appears in the case data from 2015.

5.5.6 Comparison of EC Providers who Returned Screening Forms to Those Who Did Not

Included in this analysis were 317 EC providers who met the following study criteria:

- Participated in the questionnaire (so that we had basic demographic information on record)
- Participated in the training
- Did not indicate that it would be impossible to participate in the screening exercise (for logistical reasons) – those few who did indicate this were excluded

These 317 workers could be called "potential screeners" in that they had completed the training and the logistical wherewithal to carry out the DV screening and return the screening forms. Of the 317, 75 returned at least one DV screening form and the other 242 did not. It is of interest to identify demographic patterns differentiating those who returned DV screening forms from those who did not.

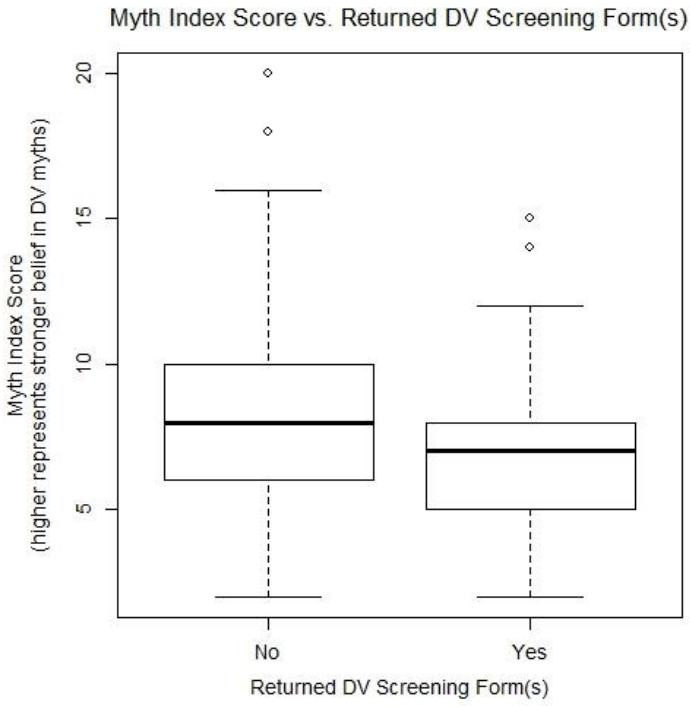
There is some evidence that female EC providers were more likely to return their screening forms than male EMS workers, although the relationship was not statistically significant (Pearson chi-square p-value = 0,065). Coloured EC providers were more likely to return

their DV screening forms than Black African EMS workers (Pearson Chi-square p-value = 0,003).

A logistic regression model was run with 'Returned DV Screening Form(s)' as the dependent variable and Myth Index Score as the independent variable. The coefficient estimate of Myth Index Score was -0,1619, which was statistically significant (p-value = 0,00251). This coefficient estimate can be interpreted as follows: for every unit increase in the Myth Index Score, the odds of returning DV screening forms is expected to decrease by 17,6%. The box-and-whisker plot (Figure 32) gives a graphical representation of the relationship between these two variables.

There was no association between returning of DV screening forms and the age of practitioner (Pearson Chi-square p-value = 0,976), ability to define DV (Pearson Chi-square p-value = 0,998), location (urban vs. rural [Pearson Chi-square p-value = 0,106]), or self-efficacy index for handling DV (logistic regression coefficient p-value = 0,127).

Figure 32: Myth Index Score vs. Returned DV Screening Form(s)



5.5.7 Relationships Between DV Detection and Practitioner Demographics

The prospective data reflects 448 DV screening forms for cases attended by the 75 identifiable practitioners referred to above. Of these 448 cases, DV was detected in 229 and not detected in 219. A limitation of the form was that nowhere was a 'Yes, Uncertain or No' ticked as to whether DV was detected. However, this variable could be imputed from other responses. A 'Yes' to DV detection was imputed if any abuse type or frequency was specified. An 'Uncertain' to DV detection was imputed if no abuse type or frequency was specified, but the practitioner had indicated courses of action had been taken corresponding to a 'Yes' or 'Uncertain' diagnosis. If no abuse type or frequency was specified and no course of action corresponding to a 'Yes' or 'Uncertain' diagnosis had been taken, DV detection was imputed as 'No'. Since the number of 'Uncertain' cases was few, 'Uncertain' and 'No' were combined into a single category for purposes of comparison with other variables.

5.5.7.1 Urban vs. Rural Detection

Comparison of DV detection vs. area shows that the rate of DV detection was higher in urban areas than rural areas; this relationship was statistically significant (p-value = 0,0013). Expressed in terms of odds ratios (based on a logistic regression model), the odds of DV detection in a case are 87,3% higher in urban areas than rural.

5.5.7.2 DV Detection and Practitioner Age

There is a clear relationship between DV detection and age of practitioner as well (Pearson Chi-square p-value = $9{,}6 \times 10^{-8}$). DV detection seems to be exceptionally high in the 30-39 age group and exceptionally low in the 50-59 age group. A logistic regression model identifies no difference between the 20-29 and 40-49 age groups. However, the odds of practitioners aged 30-39 detecting DV are approximately twice as high as for practitioners aged 20-29 (2,006) while the odds of practitioners aged 50-59 detecting DV are over twice as *low* as for practitioners aged 20-29 (2,297).

5.5.7.3 DV Detection and Practitioner Sex

Comparison of DV detection between male and female practitioners reveals that a relationship exists (Pearson chi-square p-value = 0,029). Specifically, female practitioners

are more likely to detect DV than their male colleagues. The likelihood of a female practitioner detecting DV in a case are estimated to be 59,0% higher than that of a male practitioner detecting DV in a case.

There is again a clear relationship between DV detection and practitioner race (Pearson chi-square p-value = 3,2 x 10-8). Specifically, according to the fitted logistic regression model, the estimated odds of Black African practitioners detecting DV was more than five times higher (5,091) than that of their Coloured colleagues. (This contrasts with the finding that Coloured practitioners were more likely to return the DV screening form.)

5.5.8 Relationships Between DV Detection and Patient Demographics

No relationship was identified between DV detection and patient race (Pearson chi-square p-value = 0,405) or between DV detection and patient age group (Pearson chi-square p-value = 0,141). The number of female cases for which DV screening forms were returned (n = 343) is much higher than for males (n = 50). There were 60 cases in which the patient's sex was not specified but is likely to represent female patients as they were the object of the screening, the training insisted on male identification as female cases were the default and men were the exception to the inclusion rule. Surprisingly, among those forms that were returned, the DV detection rate was higher for male patients than for female patients (Pearson chi-square p-value = 5,6 x 10-5). A suggested explanation for this phenomenon: screening for DV with a male patient takes place only when there are clear prima facie signs of DV where screening for DV with a female patient is routine (according to the training provided).

5.5.9 Frequency of EMS Use vs. Frequency of Abuse

There is a strong relationship between DV detection and patients' past use of EMS (Pearson chi-square p-value = 1,6 x 10^{-9}). Compared with those who are using EMS for the first time, there is no statistically significant difference from those who use EMS once a year, every 2-3 months, or at least once per month. However, the odds of DV detection for patients who use EMS 2-3 times per year are only about half (48,8%) as much as for those who are using EMS for the first time. On the other hand, the odds of DV detection for patients who use EMS at least once per week are estimated to be 6,43 times as much as for patients who are using EMS for the first time, while the odds of DV detection for patients

who use EMS almost daily are estimated to be 5,10 times as much as for those who are using EMS for the first time.

Among those 233 cases in the prospective data where DV was positively diagnosed (male victims included), analysis was performed comparing the frequency of EMS use to the frequency of abuse. (The contingency table analysed only 197 cases, which is the total number of cases for which a non-missing value was present for both variables). The majority of 'First time' abuse cases correspond to 'First time' EMS use, similarly for 'Almost daily' and 'At least once a week'. This suggests a positive correlation between these two variables. Statistical analysis could not be conducted using the Pearson chi-squared test for independence, since the small expected cell counts for many of the cells meant that the assumptions of the test were not met.

Since the categories are ordinal for each variable (i.e. they can be logically put in order from least to greatest or greatest to least), it is possible to analyse the relationship using the Spearman correlation coefficient (a non-parametric measure of association between two variables on a scale from -1, representing perfect negative association, to 1 representing perfect positive association, with 0 representing no association). The estimated Spearman correlation coefficient is 0.54 and the p-value for the significance test is 2.6×10^{-16}; thus there is clear evidence of a positive association between frequency of EMS use and frequency of abuse. That is, those who experience abuse more frequently tend to make use of EMS more frequently (or vice versa). This evidence supports the argument for rigorous DV screening of EMS patients.

5.5.10 Relationships between Safety Assessments and Abuse Types

5.5.10.1 Physical Abuse

Physical abuse (Yes/No) was compared individually to the six safety assessment variables, and was then compared to all six in a single binary logistic regression model. It appears that every one of the safety assessment variables individually is related to physical abuse and may be indicative of lethality.

Odds Ratios for statistically significant coefficient estimates are:

- Odds of physical abuse are 3,37 times as much if violence has increased compared to if violence has not increased

- Odds of physical abuse are 9,03 times as much if perpetrator uses alcohol and drugs compared to if perpetrator does not use alcohol and drugs and 4,19 times compared to if perpetrator *may* use alcohol and drugs (uncertain)
- Odds of physical abuse are 3,78 times as much if perpetrator has threatened to kill patient as if perpetrator has not threatened to kill patient
- Odds of physical abuse are 4,80 times as much if it is uncertain whether perpetrator or patient has contemplated suicide compared to when perpetrator or patient has contemplated suicide

5.5.10.2 Sexual Abuse

The relationship between sexual abuse and the safety assessment variable was investigated. The Logistic Regression model for sexual abuse shows that none of the coefficients of independent variables in the logistic regression model are statistically significant. Probably the number of cases of sexual abuse detected was too small to reliably measure relationships with safety assessments (despite some evidence of such relationships seen in the chi-squared p-values). Sexual abuse (Yes/No) was compared individually to the six safety assessment variables, and subsequently compared to all six in a single binary logistic regression model. It would seem that a particular safety assessment for sexual abuse is warranted.

5.5.10.3 Emotional Abuse

The relationship between emotional abuse and the safety assessment variable was explored. Emotional abuse (Yes/No) was compared individually to the six safety assessment variables, and was then compared to all six in a single binary logistic regression model. In this case there are two statistically significant coefficients, the odds ratios of which are interpreted as follows:

- The estimated odds of emotional abuse are 3,15 times as much when violence has increased as when violence has not increased
- The estimated odds of emotional abuse are 2,95 times as much when the perpetrator or patient has contemplated suicide as when the perpetrator or patient has not thought about suicide

5.5.10.4 Psychological Abuse

Psychological abuse (Yes/No) was compared individually to the six safety assessment variables, and was then compared to all six in a single binary logistic regression model.

In terms of the Logistic Regression none of the coefficients of independent variables in the logistic regression model are statistically significant. The small number of cases of psychological abuse detected probably made the measurement of relationships with safety assessments unreliable (despite some evidence of such relationships seen in the chi-squared p-values).

5.5.10.5 Verbal Abuse

Verbal abuse (Yes/No) was compared individually to the six safety assessment variables, and was then compared to all six in a single binary logistic regression model.

Interpretation of statistically significant coefficient estimates (using odds ratios):

- The estimated odds of verbal abuse are 2,34 times as much if violence has *not* increased compared to if violence *has* increased. This suggests that verbal and physical abuse have an inverse relationship.
- The estimated odds of verbal abuse are 4,85 times as much if the perpetrator uses drugs and alcohol compared to if s/he does not, and 2,92 times as much compared to if s/he may (uncertain).

5.5.10.6 Economic Abuse

Economic Abuse (Yes/No) was compared individually to the six safety assessment variables, and then compared to all six in a single binary logistic regression model. Interpretation of statistically significant coefficient estimates:

- The estimated odds of economic abuse are 4,53 times as much if the perpetrator or patient has contemplated suicide compared with if the perpetrator or patient has not contemplated suicide.

5.5.11 Safety Assessment vs. Referrals

The following analysis looks at the relationships between safety assessments and referrals in the prospective data. The analysis is restricted to the 259 cases where DV detection was possible (= 'yes' or 'uncertain'). Hence, the basic research question being asked is, given a case where DV was regarded as possible or certain, and given a particular safety assessment, what referrals were made?

The specified referral options on the form were: police, hospital ED, clinic, non-governmental organisations (NGO's), faith-based organisations (FBO's) and other. In this analysis, the relationships between safety assessments and whether there was referral *to police* (a very important referral in DV cases) is first considered. Subsequently, the relationships between safety assessments and whether *any referral was made* will be considered. Finally, the relationships between safety assessments and whether *any referral was made besides hospital ED* is considered. This seems significant because a referral to hospital ED may only address the medical symptoms whereas the other referral sites seem more likely to address the DV itself.

Methodologies are the same as in previous analysis: Pearson chi-squared test for independence, logistic regression (together with odds ratios), and 3D scatter plot for graphical representation.

Using the logistic regression models estimated probability of a certain referral given that a particular risk was positively identified in the safety assessment is introduced. The probability estimate consists of both a point estimate (single value) and a 95% Wald confidence interval which is the standard method of inference in logistic regression models.

5.5.11.1 Safety Assessments vs. Referral to Police

a) 'Violence has increased' vs. referral to police

The estimated probability of referral to police where this risk was positively identified ('Safety Assessment: Violence has increased' = 'Yes') was 0,246 (95% Wald CI: 0,173 to 0,339). That is, about 1 in 4 potential DV cases where the risk 'Violence has increased' was identified were referred to police.

There is no relationship between referral to police and the outcome of this safety assessment (p-value = 0.38). In other words, those potential DV cases where 'Violence has increased' = 'yes' are no more likely to be referred to police than those DV cases where 'Violence has increased' = 'no'. This suggests this particular risk factor is not being taken into account (by practitioner or patient) in the decision whether or not to refer to police. Similarly, the logistic regression model found no significant relationships.

b) *'Perpetrator uses alcohol and drugs' vs. referral to police*

The estimated probability of referral to police where this risk was positively identified (= 'Yes') was 0.283 (95% Wald CI: 0,217 to 0,360).

A statistical relationship (p-value = 0,019) between referral to police and the outcome of this safety assessment was observed.

The logistic regression model supports the pattern seen in the graph: cases where 'perpetrator uses alcohol and drugs' = 'no' are significantly less likely to be referred to police than cases where the risk factor is 'yes' (p-value = 0,020). It is estimated that the odds of referral to police is 3,65 times as much when the perpetrator is identified as using alcohol and drugs as when he/she is not.

c) *'Perpetrator has threatened to kill patient' vs. referral to police*

The estimated probability of referral to police where this risk was positively identified (= 'Yes') was 0.341 (95% Wald CI: 0,249 to 0,448). Chi-Square p-value is 0,0040, so there is a relationship between referral to police and the outcome of this assessment.

The logistic regression model supports the pattern seen in the graph: cases where 'perpetrator has threatened to kill patient' = 'no' are significantly less likely to be referred to police than cases where the risk factor is 'yes' (p-value = 0,022). It is estimated that the odds of referral to police is 2,22 times as much when the perpetrator is identified as having threatened to kill the patient as when he/she is not. The odds of referral to police are lower when this risk factor is 'uncertain': here the above odds ratio increases to 3,85.

d) *'Perpetrator has access to weapons' vs. referral to police*

The estimated probability of referral to police where this risk was positively identified (= 'Yes') was 0,338 (95% Wald CI: 0.241 to 0.450).

A relationship between referral to police and the outcome of this safety assessment was noted (p-value = 0.010). The logistic regression model supports the pattern seen in the graph: cases where 'perpetrator has access to weapons' = 'uncertain' are significantly less likely to be referred to police than cases where the risk factor is 'yes' (p-value = 0.0045). It is estimated that the odds of referral to police is 3,26 times as much when the perpetrator is identified as having access to weapons as when this is uncertain. (There is no difference in referral rate to police between 'yes' and 'no' cases for this safety assessment [p-value = 0.057]).

e) *'Patient afraid to go home' vs. referral to police*

The estimated probability of referral to police where this risk was positively identified (= 'Yes') was 0.351 (95% Wald CI: 0.239 to 0.482). A relationship (p-value = 0.022) between referral to police and the outcome of this safety assessment was observed.

The logistic regression model supports the pattern seen in the graph: cases where 'patient is afraid to go home' = 'no' are significantly less likely to be referred to police than cases where the risk factor is 'yes' (p-value = 0.0090). It is estimated that the odds of referral to police is 2.56 times as much when the patient is identified as being afraid to go home as when he/she is not.

f) *'Perpetrator or patient has contemplated suicide' vs. referral to police*

The estimated probability of referral to police where this risk was positively identified (= 'Yes') was 0.196 (95% Wald CI: 0.105 to 0.335). Chi-Square p-value is 0.55, so there is no evidence of a relationship between referral to police and the outcome of this safety assessment. Referral to police does not seem to be more likely in DV cases where either the perpetrator or patient is identified as having contemplated suicide.

5.5.11.2 Safety Assessments vs. Any Referral

Note: in this analysis, the 'No' and 'Uncertain' categories for each safety assessment were combined, due to their relatively small frequencies which affected the validity of the Pearson chi-squared test in some instances.

a) *'Violence has increased' vs. any referral*

The estimated probability of any referral where this risk was positively identified ('Safety Assessment: Violence has increased' = 'Yes') was 0.942 (95% Wald CI: 0.888 to 0.971). Chi-Square p-value is 0.028, so there is a relationship between the outcome of this safety assessment and whether a referral was made. In other words, those DV cases where 'Violence has increased' = 'yes' are more likely to result in a referral than those DV cases where 'Violence has increased' = 'no' or 'uncertain' (p-value = 0.020). The estimated odds of a referral being made when 'violence has increased' = 'yes' are 2.89 times as much as when 'violence has increased' = 'no' or 'uncertain'.

b) *'Perpetrator uses alcohol and drugs' vs. any referral*

The estimated probability of any referral where this risk was positively identified ('Yes') was 0.908 (95% Wald CI: 0.850 to 0.945). No relationship was observed between the outcome of this safety assessment and whether a referral was made (p-value = 1). In other words, those DV cases where 'Perpetrator uses alcohol and drugs' = 'yes' are no more likely to result in a referral than those DV cases where 'Perpetrator uses alcohol and drugs' = 'no' or 'uncertain'.

c) *'Perpetrator has threatened to kill patient' vs. any referral*

The estimated probability of any referral where this risk was positively identified (= 'Yes') was 0.965 (95% Wald CI: 0.896 to 0.989). Chi-Square p-value is 0.032, so there is a relationship between the outcome of this safety assessment and whether a referral was made. In other words, those DV cases where 'Perpetrator has threatened to kill patient' = 'yes' are more likely to result in a referral than those DV cases where 'Perpetrator has threatened to kill patient' = 'no' or 'uncertain' (p-value = 0.027). Specifically, the estimated

odds of a referral being made when ‘Perpetrator has threatened to kill patient’ = ‘yes’ are 4.08 times as much as when ‘Perpetrator has threatened to kill patient’ = ‘no’ or ‘uncertain’

d) *‘Perpetrator has access to weapons’ vs. any referral*

The estimated probability of any referral where this risk was positively identified (= ‘Yes’) was 0.987 (95% Wald CI: 0.914 to 0.998). Chi-Square p-value is 0.0064, so there is a relationship between the outcome of this safety assessment and whether a referral was made. Those DV cases where ‘Perpetrator has access to weapons’ = ‘yes’ are more likely to result in a referral than those DV cases where ‘Perpetrator has access to weapons’ = ‘no’ or ‘uncertain’ (p-value = 0.018). Specifically, the estimated odds of a referral being made when ‘Perpetrator has access to weapons’ = ‘yes’ are 11.61 times as much as when ‘Perpetrator has access to weapons’ = ‘no’ or ‘uncertain’.

e) *‘Patient is afraid to go home’ vs. any referral*

The estimated probability of any referral where this risk was positively identified (‘Yes’) was 0.930 (95% Wald CI: 0.827 to 0.973). No relationship was noted between the outcome of this safety assessment and whether a referral was made (p-value = 0.68). In other words, those DV cases where ‘Patient is afraid to go home’ = ‘yes’ are no more likely to result in a referral than those DV cases where ‘Patient is afraid to go home’ = ‘no’ or ‘uncertain’.

f) *‘Perpetrator or patient has contemplated suicide’ vs. any referral*

The estimated probability of any referral where this risk was positively identified (‘Yes’) was 0.913 (95% Wald CI: 0.790 to 0.967). No relationship was observed between the outcome of this safety assessment and whether a referral was made (p-value = 1). Those DV cases where ‘Perpetrator or patient has contemplated suicide’ = ‘yes’ are no more likely to result in a referral than those DV cases where ‘Perpetrator or patient has contemplated suicide’ = ‘no’ or ‘uncertain’.

5.5.11.3 Safety Assessments vs. Any Referral besides Hospital ED

Note: 'referral to anywhere *besides hospital ED*' in this analysis means that this study focused on referral destinations other than hospital ED. Thus, for instance, 'Yes' for this variable means that the patient was referred to somewhere other than hospital ED (though this patient may or may not *also* have been referred to hospital ED).

a) *'Violence has increased' vs. any referral besides hospital ED*

The estimated probability of referral to anywhere besides hospital ED where this risk was positively identified ('Safety Assessment: Violence has increased' = 'Yes') was 0.312 (95% Wald CI: 0.240 to 0.394). No relationship was observed between referral to any site besides hospital ED and the outcome of this safety assessment (p-value = 0.12). Those DV cases where 'Violence has increased' = 'yes' are no more likely to be referred (apart from hospital ED) than those DV cases where 'Violence has increased' = 'no'. This suggests this particular risk factor is not being taken into account in the decision whether or not to make a referral besides to the hospital ED.

b) *'Perpetrator uses alcohol and drugs' vs. referral anywhere (besides hospital ED)*

The estimated probability of referral anywhere (besides hospital ED) where this risk was positively identified (= 'Yes') was 0.362 (95% Wald CI: 0.289 to 0.441). A statistical relationship was observed between referral to anywhere (besides hospital ED) and the outcome of this safety assessment (p-value = 0.011). The logistic regression model supports the pattern seen in the graph: cases where 'perpetrator uses alcohol and drugs' = 'no' are significantly less likely to be referred anywhere (excluding hospital ED) than cases where the risk factor is 'yes' (p-value = 0.011). It is estimated that the odds of referral anywhere (excluding hospital) is 3.31 times as much when the perpetrator is identified as using alcohol and drugs as when he/she is not.

c) *'Perpetrator has threatened to kill patient' vs. referral anywhere (besides hospital ED)*

The estimated probability of referral to police where this risk was positively identified (= 'Yes') was 0.424 (95% Wald CI: 0.323 to 0.530). A statistical relationship was noted between referral anywhere (excluding hospital ED) and the outcome of this safety assessment (p-value = 0.0012).

The logistic regression model supports the pattern seen in the cases where 'perpetrator has threatened to kill patient' = 'no' are significantly less likely to be referred anywhere (besides hospital ED) than cases where the risk factor is 'yes' (p-value = 0.016). It is estimated that the odds of referral to anywhere (Excluding hospital ED) is 2.17 times as much when the perpetrator is identified as having threatened to kill the patient as when he/she is not. (Somewhat strangely, the odds of referral to anywhere (excluding hospital ED) are even lower when this risk factor is 'uncertain': here the above odds ratio grows to 4.08).

d) *'Perpetrator has access to weapons' vs. referral to anywhere (besides hospital ED)*

The estimated probability of referral to police where this risk was positively identified (= 'Yes') was 0.429 (95% Wald CI: 0.323 to 0.541). A statistical relationship exists between referral to anywhere (besides hospital ED) and the outcome of this safety assessment (p-value = 0.00081). The logistic regression model supports the pattern seen in the graph: cases where 'perpetrator has access to weapons' = 'uncertain' are significantly less likely to be referred to anywhere (besides hospital ED) than cases where the risk factor is 'yes' (p-value = 0.00027). It is estimated that the odds of referral to anywhere (besides hospital ED) is 4.3 times as much when the perpetrator is identified as having access to weapons as when this is uncertain. (There is no significant difference in referral rate to anywhere besides hospital ED between 'yes' and 'no' cases for this safety assessment [p-value = 0.095]).

e) *'Patient afraid to go home' vs. referral to anywhere (besides hospital ED)*

The estimated probability of referral to hospital ED where this risk was positively identified (= 'Yes') was 0.386 (95% Wald CI: 0.269 to 0.517). There is insufficient evidence to posit a

relationship between referral to anywhere (besides hospital ED) and the outcome of this safety assessment (p-value = 0.074). It does not appear that the patient's being afraid to go home significantly impacts the likelihood of the patient being referred to any source of support besides hospital ED.

f) 'Perpetrator or patient has contemplated suicide' vs. referral to anywhere (besides hospital ED)

The estimated probability of referral to anywhere (besides hospital ED) where this risk was positively identified (= 'Yes') was 0.283 (95% Wald CI: 0.172 to 0.428). No relationship was noted between referral to anywhere (besides hospital ED) and the outcome of this safety assessment (p-value = 0.58). Referral to anywhere besides hospital ED does not seem to be more likely in DV cases where either the perpetrator or patient is identified as having contemplated suicide.

5.6 Summary of Phase II Results

It is noteworthy that all those surveyed were participants in the cohort study. Because only 75 of those trained actually implemented the screening tools, the summary results of the survey and cohort study are presented separately.

5.6.1 Survey Results: EC providers Beliefs About Their Role in DV

The Cronbach's alpha score for the DV Myth Index (0.305) is well below the minimum acceptable value. This implies that the scale as currently constructed cannot serve as an internally consistent measurement of an EMS worker's level of belief in myths about DV. The Cronbach's alpha statistics for the EMS Worker Self-Efficacy Scale and the Perceptions of Medical Capacity Scale (0.852 and 0.905 respectively) implies that these two scales *do* provide internally consistent measurements of the quantities they seek to measure.

The chi-squared test for independence did not detect any association between sex and ability to define DV. The chi-squared test for independence found no evidence of an association between age group and DV definition score. The Pearson chi-squared test for

independence identified an association between ability to define DV and level of experience. It appears, somewhat counter-intuitively, that in general, those with less experience tended to score higher than those with more. Most participants (n = 95) had 2-5 years' EMS related experience. Whilst male EMS workers appear more likely than female EMS workers, on average, to believe myths about DV, a practitioner's age or sex is not associated with the ability to define DV. Except for this finding, there is no other evidence to suggest female practitioners are preferable to male practitioners in responding to DV cases.

The 35-39 age-group reported significantly higher mean self-efficacy scores than either the lowest age category or the 30-34 age-group. No evidence was found of an association between age group and DV definition score. This reduces the trust one can place on younger, older, male or female practitioner's propensity to define and consequently diagnose DV since a case definition of a condition is a necessary (although not sufficient) requirement for its diagnosis.

Myths about DV are more prevalent among Black Africans yet in mean scores for self-efficacy index, self-identifying African respondents scored higher than self-identifying Coloured and White respondents. In mean scores for perceptions of medical capacity index, self-identifying African respondents scored highest—significantly higher than each of the other race groups. This is of concern as this category of respondents harbour myths, but believe they and the medical capacity are efficacious in DV responses. The cohort study findings provide more concrete analysis for EMS efficacy. Participants with 2-5 years' experience had a more optimistic view of the medical capacity to cope with DV than those with 11-15 years' experience or 20+ years' experience. These considerations are useful premises for future interventions. The BTech in EMC qualification appears to be the most effective in dispelling myths about DV, while the BAA appears to be the least effective. With respect to self-efficacy index for dealing with DV, those with BAA qualification have a significantly *higher* self-efficacy than those who do not. Still, it would seem that EMS qualification is not a determinant of any DV definitional ability.

In a distribution of self-appraised DV detection estimates for the preceding month, fifty three (n; 15.36%) claimed an estimation of 40-50%. When the preceding year is considered, n =

61 (17, 68%) claimed a DV detection of 30-40%. As there is no reason to suspect a deliberate over-estimation amongst this voluntary sample, the actual DV detection rates from the cohort study make for an interesting comparative analysis.

5.6.2 Summary of Cohort Study Results

Applying the DV training and screening tool just as it was applied in the study will yield an increase in the DV detection rate, by a *minimum* of about 1,514% in absolute terms. If the DV training and screening tool are applied more rigorously, and if patient confidentiality can be promoted—i.e. EMS workers are required/professionally obligated to use the tool—then the increase in the DV detection rate is likely to be far greater, as suggested by the minimum 4,79% detection rate amongst the 75 individuals who did use and return the DV screening tool. Challenging beliefs is crucial, as for every unit increase in the Myth Index Score, the odds of returning DV screening forms is expected to decrease by 17,6% (p-value ≥ 0.05).

5.6.2.1 Detection Rates, Demographic Relationships, Types of Abuse and EMS Use

DV detection rate is defined as the proportion of EMS cases involving a female patient aged 14+ in which DV is diagnosed and recorded as such in medico-legal reports by the attending EC provider.

The retrospective data constituted patient records from 22 August to 14 October 2015, in which no DV screening tool was used. After sampling of 30 clusters (7,861 cases) across all 5 sampled bases and capturing and cleaning of all eligible cases in these clusters, the total number of cases sampled was 3,633. DV was diagnosed and reflected on the patient form in just 25 cases, a rate of 0,688%. It turns out that in the retrospective data, 9 of the 25 DV detected cases were males and 16 were female. In retrospective data 86,55% of sampled cases are female. When this proportion is applied to the previously calculated 46,45% inclusion rate a gender-adjusted inclusion rate of 40,21% is achieved (i.e. where only females are included). This also means that the estimated retrospective DV detection rate (focusing only on females) is 16/3,135 = **0,51%.** Self-reported estimates (in questionnaires) of DV detection rate from practitioners (in the cohort study) were grossly overestimated at 32,2% (weighted average).

In a self-selected sample, 453 forms were returned by 75 unique participating EC providers (of 329 that were trained in DV screening). Of these 453 cases, a positive DV diagnosis was made in 233 cases, DV was uncertain in 26 cases, and DV was deemed not to be present in 194 cases. Of the 453 sample, 403 pertained to female patients, and of these 403, a positive DV diagnosis was made in 194 of 403 cases, a rate of **48.1%**—extremely high! However, undoubtedly this is partly due to the self-selected nature of the sample. Under the most stringent assumptions, the "post-intervention" DV detection rate among EMS workers who participated in the training is estimated at 1,51% (a threefold increase than the cohort with no intervention). If only the 75 EMS workers who returned screening forms are considered, the estimated DV detection rate would be **4,79%** (a nine fold increase than the cohort with no intervention).

There is a strong relationship between DV detection and patients' past use of EMS. Compared with those who are using EMS for the first time, there is no statistically significant difference from those who use EMS once a year, every 2-3 months, or at least once per month. There is a positive correlation between DV and 'First time', 'Almost daily' and 'At least once a week' EMS use.

Physical violence was positively associated with risk assessment variables. Odds of physical abuse are 3,37 times as much if violence has increased compared to if violence has not increased. Odds of physical abuse are 9.03 times if perpetrator uses alcohol and drugs compared to if perpetrator does not use alcohol and drugs and 4,19 times compared to if perpetrator may use alcohol and drugs. Odds of physical abuse are 3,78 times as much if perpetrator has threatened to kill patient as if perpetrator has not threatened to kill patient. Odds of physical abuse are 4,80 times as much if it is uncertain whether perpetrator or patient has contemplated suicide compared to when perpetrator or patient has contemplated suicide. Emotional abuse is associated with increased physical violence and threats of perpetrator suicide. Verbal abuse is associated with violence increase and alcohol and drug use by the perpetrator. Economic abuse was linked to suicidal ideation of the perpetrator, and may compound the coercive context created.

To summarise, whilst 'Coloured' female practitioners are more likely to return screening forms, DV detection is most likely to improve through female, urban 'black African' EC providers aged 30-39, who do not believe in DV-related myths; amongst patients that are 'First time', 'Almost daily' or 'At least once a week' EMS users. Risk assessment variables are all associated with physical violence and selectively with other types of DV. The

application of the DV training and screening tool just as it was applied in the study, i.e. voluntary participation, it will yield approximately a three-fold increase in the DV detection rate (i.e. from 0.51% to 1.51%). If the DV training and screening tool are applied more rigorously—i.e. EMS workers are required by the employer or ethically obligated by the regulator to use the tool—then the increase in the DV detection rate is likely to be far greater (nine-fold), as suggested by the minimum 4,79% detection rate amongst the 75 individuals who did use and return the DV screening tool.

5.6.2.2 Safety Assessment and Referrals

The many missed opportunities for referral and its associated risk is evident below.

In most cases, DV cases are being referred somewhere, but most of them are not being referred anywhere other than the hospital. Some of the risk factors in the safety assessment, when positively identified, increase the odds of a referral to police, or to any non-hospital destination, but others don't. Increased risk of violence was not associated with referral to the police. The risk of alcohol and drug use amongst perpetrators was not associated with any referral except police referral. It is estimated that the odds of referral to police is 2,22 times as much when the perpetrator is identified as having threatened to kill the patient as when he/she is not. However, the odds of referral to police are lower when this risk factor is 'uncertain'. The presence of weapons or fear of returning home, results in police referral. Suicidal ideation (by victim or perpetrator) is not associated with referral to the police.

The estimated odds of a referral being made when the 'Perpetrator has threatened to kill patient' are 4,08 times as much as when perpetrator has not threatened to kill the patient or if uncertain. The estimated odds of a referral being made when the 'Perpetrator has access to weapons' are 11,61 times as much as when 'Perpetrator has no access to weapons' or if 'uncertain'. Fear of returning home or suicidal contemplation was not associated with any referral.

There is no relationship between referral to any site besides hospital ED and the outcome of the safety assessment of escalating violence. This suggests that escalating violence, as a particular risk factor (unlike the use of alcohol and drugs, homicidal tendency or access to weapons) is not taken into account in the decision on whether or not to make a referral besides to the hospital ED.

6 CHAPTER SIX: DISCUSSION/INTERPRETATION

6.1 Introduction

The research question was: *What is the role and scope of the South African EC discipline with regard to DV, within the context of a national and global health sector response to GBV?* To answer this, evidence must be led as to where EC educators and providers ideologically and clinically locate themselves relative to the health sector response to GBV. Further, the reciprocal implications that explanations of GBV have for EC educational theory and clinical practice is of interest. Having considered the emergency medical practice ideal in responding to a GBV case, and the current EMS design and EC function, the emergent themes cast understanding on their current and future impact on each other.

Chapter 4 presented qualitative descriptive results of Phase I and Chapter 5 presented the quantitative findings of Phase II. Phase I and II findings could not satisfy the study aims independently due to their individual methodological weaknesses. Chapter 6 seeks to provide an interpretation of both qualitative and quantitative results. In particular, the interpretation will address how quantitative results provide new results, new and better instruments, and better interventions (Cresswell, 2013). This Chapter will also interpret where quantitative findings generalise qualitative findings or not.

In an endeavour to abstract further toward theory the open, axial and selective codes, and categories are considered against the building blocks of theory purported by Anfara Jr & Mertz (2006) as moving from concrete experience (of the data collection) to concept and construct development. These findings may contribute to existing evidence and theory development through the introduction of the Risk-Need-Responsivity practice-model. This chapter will discuss the qualitative and quantitative findings, their joint meaning and their potential contributions to EC systems, epidemiology and clinical practice. To conclude the discussion, the qualitative methods are evaluated.

Phase II findings do generalise Phase I findings. To elevate the discourse from Phase I, with due consideration of Phase II findings and the consolidation of the six Phase I themes defined in 4.5; three categories emerge. These emergent categories (Table 17) from Phase I and II key findings that frame this discussion chapter are therefore:

- Conceptualisation of the DV health burden and unacceptability of current EC approaches (converging Themes 1 and 2)
- Regulatory and EMS capture through masculine, biomedical or resuscitation hegemony (converging Themes 3 and 4)
- EC professionalization toward a community of practice (converging Themes 5 and 6)

Table 17: Emergent Categories

Emergent Categories	Phase I Themes	Key Phase II Findings
Category 1: Conceptualisation of the DV health burden and unacceptability of current EC approaches	Theme 1: Prehospital screening for DV (DV) is acceptable and effective Theme 2: The burden of DV motivates EC (EC) bio-psycho-social responses	Participant's self-estimated DV diagnosis to be 32.2% (weighted average). Retrospective cohort finds a detection rate of 0.51. The application of the DV training and screening tool just as it was applied in the study, i.e. voluntary participation, it will yield approximately a three-fold increase in the DV detection rate (i.e. from 0.51% to 1.51%). If the DV training and screening tool are applied more rigorously—i.e. EMS workers are required by the employer or ethically obligated by the regulator to use the tool—then the increase in the DV detection rate is likely to be far greater (nine-fold), as suggested by the minimum 4,79% detection rate amongst the 75 individuals who did use and return the DV screening tool. There is a positive correlation between DV and 'First time', 'Almost daily' and 'At least once a week' EMS use. There is reduced trust one can place on younger, older, male or female practitioner's propensity to define and consequently diagnose DV since a case definition of a condition is a necessary (although not sufficient) requirement for its diagnosis. Some DV Risk factors such as fear of returning home or suicidal ideation was not associated with referral. There is no relationship between referral to any site besides hospital ED and the outcome of the safety assessment of escalating violence. This suggests that escalating violence, as a particular risk factor (unlike the use of alcohol and drugs, homicidal tendency or access to weapons) is not taken into account in the decision on whether or not to make a referral besides to the ED.

Category 2: Regulatory and EMS capture through masculine hegemony and resuscitation bias	Theme 3: EC responses to DV should be guided by Evidence-based Medicine Theme 4: EC challenges and threats to DV responses require organisational and ideological change	Save for higher male belief in myths there is no other evidence to suggest female practitioners (as was the EMS conception) are preferable to male practitioners in responding to DV cases. Challenging beliefs is crucial, as for every unit increase in the Myth Index Score, the odds of returning DV screening forms is expected to decrease by 17,6% (p-value ≥ 0.05). There is a positive correlation between DV and 'First time', 'Almost daily' and 'At least once a week' EMS use.
Category 3: EC professionalization toward a community of practice.	Theme 5: There exists paradoxical EC practice relative to the behavioural pathology of DV Theme 6: The EC discipline is in need of role definition, identity and violence re-contextualisation	African respondents harbour myths, but believe in their self-efficacy and that of the medical capacity in DV responses. The retrospective cohort study provides concrete analysis that EMS lacks efficacy with a non-intervention detection rate of 0.51. 'Coloured' female practitioners are more likely to return screening forms, DV detection is most likely to improve through female, urban 'black African' EC providers aged 30-39, who do not believe in DV-related myths; amongst patients that are 'First time', 'Almost daily' or 'At least once a week' EMS users. Risk assessment variables are all associated with physical violence and selectively with other DV types. The application of the DV training and screening tool with voluntary participation will yield approximately a three-fold increase in the DV detection rate (i.e. from 0.51% to 1.51%). If mandatory, the detection rate escalates (nine-fold from no intervention) to 4.79%. There is no relationship between referral to any site besides hospital ED and the outcome of the safety assessment of escalating violence. This suggests that escalating violence, as a particular risk factor (unlike the use of alcohol and drugs, homicidal tendency or access to weapons) is not taken into account in the decision on whether or not to make a referral besides to the ED.

6.2 Category 1: Conceptualisation of the DV Health Burden and Unacceptability of Current EC Approaches

The overall conception of the DV burden for EC was the unfair, biased and disproportionate EC responses to DV cases relative to the epidemic proportions of DV. Patient-practitioner consensus is not a necessary requirement of EC diagnostics. The patient corroboration[71]of case-definition criteria for his/her DV assessment depends on the extent of victim[72] or survivor[73] mode of the DV patient, and therefore cannot necessarily predicate a provisional diagnosis of domestic abuse. Incidence data[74] therefore, need not be *contingent* upon long term patient 'awareness' or self-disclosure of abuse. The diagnosis of DV by the EC provider does not undermine the EMS patient's autonomy, as patients are not required to concur on any diagnosis of any health-care professional. After all, the diagnosis is made upon the *probable* satisfaction of the pathological case-definition being reasonably met.

EDs also have the problem of missed or unacknowledged cases. Even in cases of physical violence, the classificatory threshold for IPV was found to be too high (Olive, 2016). This implies that the diagnostic criteria to be satisfied and the necessary context for a case of physical violence to be classified as IPV was 'beyond reach' and therefore resulted in fewer cases of physical violence being classified as IPV. The absence of a system of DV diagnosis could explain the low detection rate in the retrospective sample of this study. Recall that the observational analysis of simulated practice documented diagnostics for resuscitation mostly.

The disproportionate focus by EC, further to the diagnostic concern mentioned above, could be explained by a lack of understanding of the magnitude of GBV, that this is a global public health problem, deserving of an unequivocal EC response. Although the sceptical nature of GBV-related prevalence data is well documented; this makes the argument for EC to document incidents and histories of DV and other forms of GBV amongst its own patient population so that evidence on prevalence may be strengthened. To be fair to practitioners,

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[71] Verification or validation

[72] Victim behaviour may include masking of DV history, signs or symptoms

[73] Survivor behaviour may include help-seeking behaviour

[74] Identification of new cases

the judgment of the unacceptability of current approaches must be contextualised by their belief in myths, self-efficacy and perceptions of the medical capacity for DV 'response-ability'. The survey is helpful in this regard.

The role of the police was criticised by participants in Phase I. In particular, EC providers were of the view that the police was not responsive to DV cases. In DV and intimate rape cases…"therapeutic jurisprudence is concerned with the needs of the victims, and how the law and police play a role in increasing their well-being." (Simon, Ellwanger, & Haggerty, 2010)

> Given that in these offenses [DV battering and rape], victims have the lowest reporting rates of any violent crime, the victim decision to call the police represents an expectation that the mere physical presence of a police officer may redefine the nature of the violence from a private conflict to a societal wrong that will not be tolerated. Police partnership with and treatment of the victim with respect and dignity can change the dynamics of the violence, terminate the violence, and set the criminal justice process in motion by arresting the offender in most cases. Police arrest, and subsequent prosecution and conviction, sends a message to offenders that society does not tolerate their violence, and allows the victim to begin to heal. (Simon, Ellwanger, & Haggerty, 2010, p. 306)

In the USA, both "the rape and the domestic violence reform movements have reversed the tide of historical negative treatment of female victims of these offenses" [75] (Simon, Ellwanger, & Haggerty, 2010). The same cannot be said of health care responses to DV in RSA. Police referrals by EC providers were seemingly undermined as a resource. In the retrospective cohort, the police were absent in 99,4% of cases screened for DV (N = 3633). In the prospective cohort, there is no relationship between referral to any site besides hospital ED and the outcome of the safety assessment of escalating violence. This suggests that escalating violence, as a particular risk factor (unlike the use of alcohol and drugs, homicidal tendency or access to weapons) is not taken into account in the decision on whether or not to make a referral besides to the hospital ED. Minimising the role of the police is probable if DV is not see as a crime by EC providers or if patients and practitioners have little confidence in the police to abate the violence, to hold those responsible to account and facilitate justice. It would seem that all these conditions exist. Mandatory

[75] Logistic regression analysis indicates that police agencies in mandatory and preferred arrest jurisdictions increase the odds of arrest for domestic violence incidents and violations of orders of protection, compared to police agencies in jurisdictions with permissive/discretionary arrest policies.

reporting to the police is not supported as it may violate the autonomy of the victim and escalate reprisal violence. The challenge is to reverse the tide of iatrogenic harm/risk brought by clinical practice omissions (that include referrals) in EMS responses to DV.

This study was able to quantify the DV health burden and iatrogenic risk of EMS in relation to DV responses. The historical detection rate (from the retrospective cohort of this study) of *5.1/1000 cases* is of interest as a baseline prevalence estimate for EMS patients. As a finding, it is unprecedented for South African EMS and serves as a point of reference for future interventional research or programmes. Participant's self-estimated DV diagnostic-rate is 32.2% from survey data. Such a considerable difference cannot go unchallenged. If the historical detection rate from medical records is understated, then it implies that DV cases diagnosed as such are not recorded as such. This would constitute unprofessional conduct as it negates the forensic and EC goal of documenting patients' history and the chief complaint. As the Monte Carlo simulations verified the power and precision of the retrospective cohort sampling, the finding is valid. We also have no reason to suspect dishonesty among respondents[76], so it is likely that DV-related history or case presentation is a third of the workload[77], but that it is not acknowledged in the medical record as such. Having now confirmed and quantified the low detection (and referral) rate, the deduction is that EMS *does not* conform to the norms and standards[78] referred to in 1.3.1.

The nine-fold increase in DV detection following the screening training and implementation translates to *47.9 cases detected per 1000* EMS patients[79]. This detection rate too is unprecedented for South African EMS and provides compelling empirical evidence in support of the DV screening policy implementation. The difference in the above DV detection rates, quantifies the extent of the practice gap. It suggests, rather alarmingly that

[76] Respondents were reminded to answer truthfully and that as they would be anonymised, there could be no reprisals for honest (but perhaps professionally incriminating) answers.

[77] This is plausible given the DV/IPV prevalence rates.

[78] "The Primary Health Care Package for South Africa: a set of norms and standards" (Department of Health, 2000)

[79] These are patients who satisfy the inclusion criteria of being female, 14 years and older, or who are otherwise selectively screened.

the EMS misses (or does not acknowledge) *42.8 DV cases per 1000*[80] EMS patients. Also of concern, is that there are missed opportunities for referral, particularly in relation to risk factors. Missed DV cases and/or poor referrals, as iatrogenic risk, may elevate the vulnerability of patients to further (non-fatal or fatal) abuse. Phrased differently, EC providers miss a great many DV cases and for the cases that it does detect, it does not refer adequately. This is likely to be the result of un-formalised referral networks, as networks are relationships built over time. The EMS does not use social networks[81] other than the district health referral system, hence the constant ED 'delivery'.

To highlight the relevance of the above finding, a retrospective National Study of Female Homicide in RSA (Mathews, et al., 2004) found that 8.8 per 100 000 women 14 years and older were killed by an intimate partner in 1999. There are high rates of unrecognised abuse among ED patients, and when screened one third reported seeking help on the basis of information received (IOL, 2008b). By rational conjecture, some of these fatalities may well be amongst the high number of missed detection cases. It is also possible that the missed case detection is conservative when one considers the high number of patients that are responded to but not transported to any facility. In the analysis of all cases dispatched over 72 hours by the eThekwini EMS in Durban, South Africa, it was found that of 1385 (N) cases responded to, 27,5% were not transported to hospital and 2.46% could not be found. This represents 30% of cases that do not benefit from facility-based care or ambulance response. In the same study, 58% of cases required either no intervention or transport only (Newton, Naidoo, & Brysiewicz, 2015).

Whilst there is much evidence to suggest emergency departments have a considerable burden of GBV cases, there is a dearth of evidence about the prehospital burden of GBV. This is particularly relevant in cases of prehospital mortality or prehospital discharge, as these cases do not benefit from any hospital-based care. The detection of 47,9 cases per 1000 EMS cases in this study is high when compared to US data referred to in Chapter 2.

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[80] Missed DV cases in EMS are the DV-positive cases that remain undetected or unacknowledged after the EMS response and subsequent interaction, irrespective of the presenting health complaint. Missed DV cases, in epidemiology, represent the health systems sensitivity to DV victims.

[81] Networks (organisations and their linkages) contribute to social capital. Social capital enhances resilience at an individual or community level.

Joseph et al. (2015), in a 6-year (2007-2012) retrospective analysis of the US National Trauma Data Bank (NTDB) found that amongst a total of 2,910,122 trauma cases, the overall reported prevalence of DV among trauma patients was 5,7 cases per 1000 trauma centre discharges. This finding is closer to the retrospective cohort detection rate of 5,1 DV cases per 1000 EMS cases. DV prevalence increased among children (14.0 cases per 1000 trauma centre discharges in 2007 to 18.5 cases per 1000 trauma centre discharges in 2012). The rate of child abuse was 17 cases per 1000 trauma centre discharges. However, these were trauma centre cases, not prehospital cases. Even with the 'low' detection rate of 5.7/1000 trauma cases, the authors still advocated for "robust mandatory screening" among trauma patients nationally:

> Domestic violence is prevalent among trauma patients. Over the years, the reported prevalence of domestic violence has been increasing among children and adults, and continues to remain high among female trauma patients. A robust mandatory screening for evaluating domestic violence among trauma patients, along with a focused national intervention, is warranted (Joseph, et al., 2015, p. 1177).

This study finding of 47,9 DV cases detected per 1000 EMS patients is considerably higher (eight-fold) than the Joseph study. This is likely to be explained by the routine nature of screening all female patients (14+) presenting to the EMS. This would include both acute trauma and primary medical complaints (chronic or new exacerbation or acute presentation). The finding calls for a shift in focus from overt trauma cases to patients where DV may be masked. Even patients, who give a history of non-fatal strangulation (NFS), do not show external signs of NFS in 49% of cases (Zilkens, et al., 2016); implying the importance of believing the patient.

The annual rate of child abuse as reported by the US Department of Health is 10 cases per 1000 inpatients (Centers for Disease Control and Prevention (CDC), 2015). The Prevalence of Abuse and Intimate Partner Violence Surgical Evaluation (PRAISE) study (Sprague, et al., 2013) reported that one in six women[82] disclosed a history of IPV within the last year, and one in three women[83] had experienced IPV during their lifetime. Forty-nine women (1,7%, 95% 1,3-2,2%) presented to their current clinic visit as a direct consequence of IPV.

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[82] (455/2,839, 16.0%, 95% CI: 14.7-17.4%)

[83] (882/2,550, 34.6%, 95% CI: 32.8-36.5%)

These all suggest a burden of varying estimation. Routine surveillance and screening will likely shape specificity of responses.

The belief in myths by EMS personnel is not unique to the South African EMS. In a US study including a total of 403 surveyed EMS respondents, 71% indicated that they frequently encounter patients who disclose domestic violence; 45% believe that if a victim does not disclose abuse, there is little they can do to help; and from 32% to 43% reported assumptions and attitudes that indicate beliefs that victims are responsible for the abuse (Donelly, Oehme, & Melvin, 2016). In such an established EMS system as the USA, the EMS must take partial responsibility for practitioners holding views that blame victims. The meaning for RSA is that for every unit increase in the Myth Index Score, the odds of returning DV screening forms is expected to decrease by 17,6%. In this way, EC provider belief in myths may undermine DV detection and an estimation of the DV burden for EC. The attrition of participants[84] in the prospective cohort may be attributed partially, to the belief in myths. The reason cited by participants and base managers for not implementing screening procedures was the inability to maintain confidentiality due to multiple patients (cases) on board an ambulance.

The retrospective cohort found no association between DV detection and urban or rural locale, probably due to the low number of detections. There was also no association found between the handing in of patient report forms and urban/rural locale. However, comparison of DV detection vs. area shows that the rate of DV detection was significantly higher[85] in urban areas than rural areas. In a review of the published empirical and theoretical literature on similarities and differences in IPV in rural locales compared to urban and suburban locales, 63 studies indicates that the rates of IPV are similar across rural, urban, and suburban locales, although IPV homicide rates may be higher in rural locales (Edwards, 2015). The review recommends the improving of availability, accessibility, and quality of IPV services in rural locales for the following reasons: IPV perpetrators in rural

[84] Of the 317 eligible 'DV screeners', 75 (23,66%)returned at least one DV screening form and the other 242 did not. 'Loss to follow up' or participant attrition is a standard risk of cohort studies. Short data collection periods reduce this risk.

[85] Prospective cohort, (p-value=0,0013). Expressed in terms of odds ratios (based on a logistic regression model), the odds of DV detection in a case are 87,3% higher in urban areas than rural. This may be indicative of rural DV/IPV under-detection as prevalence rates ≠ detection rates.

locales, may perpetrate more chronic and severe IPV, which could be due to the higher rates of substance abuse and unemployment documented among rural perpetrators; IPV victims in rural locales may have worse psychosocial and physical health outcomes due to the lack of availability, accessibility, and quality of IPV services. EMS, however, has the potential to improve availability, accessibility, and promote quality of IPV services in the rural context, given the rural EMS footprint in RSA. Resource-poor contexts do not necessarily justify resource-poor interventions[86], yet marginalised communities must often struggle for what may be basic services elsewhere.

In addition, a study of Brazilian women's health seeking behaviour (Kiss, et al., 2012), rural women who used formal services [such as EMS] were mainly those who experienced more severe levels of violence, were severely injured, had children who witnessed the violence, or whose work was disrupted by the violence. The study moved that messages about violence and equality need to reach informal networks and the wider community in order for national anti-violence policies to be successful in supporting women before violence becomes intolerable (Kiss, et al., 2012). In this way, EMS may translate "international standards and national policies into actions that genuinely reach women experiencing violence" (Kiss, et al., 2012).

EMS's now have empirical motivation to invest in DV prevention and responses in an attempt to reduce demand and to be more responsive. There is a positive correlation between DV and 'First time', 'Almost daily' and 'At least once a week' EMS use. This is indicative of the caseload burden that DV adds to the EMS. Presently, there is reduced trust placed on younger, older, male or female practitioner's propensity to define and consequently diagnose DV since a case definition of a condition is a necessary (although not sufficient) requirement for its diagnosis. Some DV Risk factors such as fear of returning home or suicidal ideation was not associated with referral. Such findings define the iatrogenic risk perpetuated by the EMS, and present opportunities for improvement.

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[86] This notion was well received at an international conference: Christopher L, Khan A, Naidoo N. (2013). Aeromedical Systems and Community of Practice in obstetric emergencies. *Aeromed Africa: 2nd International Conference*: International Convention Centre, Cape Town, RSA Cape Town. (November 2013) [Best presentation]

In answering the question: “Ambulance demand: random events or predicable patterns?” Cantwell, Paul Dietze, Morgans, & Smith (2013) found that temporal patterns are present in ambulance demand. Also, these populations are distinct from those found in hospital datasets suggesting that variation in ambulance demand should not be inferred from hospital data alone. Case types seem to have similar temporal patterns across jurisdictions; thus, research where demand is broken down into case types would be generalisable to many ambulance services and can lead to improvements in ambulance service deliverables. It was also the experience of this cohort study that has influenced the WC EMS case typology, risk assessment and data collection parameters of the new electronic medical records[87].

DV, and in particular, IPV is, no doubt, a health issue for women and the EC voices in this study have indicated that it is an issue for EC practitioners too. The EMS however, has not documented DV/IPV as a burden for EC. This study documents, for the first time in South African EMS history that the health care response by the EMS is inadequate to meet women's needs on the one hand, and the health system mandate on the other. This study examined through a critical theory lens the EC response to DV detection before and after a screening intervention. Even though these findings are new for South Africa and perhaps Africa, Tower (2007, p. 438) documented a decade ago, that:

> “…dominant discourses in the literature indicate that health professionals lack knowledge about intimate partner violence, have attitudes and values that inhibit an effective response, and have no time to respond to these women. To date, strategies to improve the health care response have been limited in effectiveness as structural constraints of the health service and models of practice employed have not been addressed.” (Tower, 2007, p. 438)

In considering such structural constraints, ‘masculine hegemony and a resuscitation bias’ is discussed in the next section as factors that negatively influence EC ideology.

[87] As part of the dissemination strategy of study findings, the HPCSA and National Department of Health: EMS is being engaged with, to the extent that the WC EMS has improved their electronic reporting of DV related cases. Such cases automatically get escalated in triage to avoid undermining of DV cases by the ambulance crew and by communications centre staff. This was to ensure ethical conduct in research.

6.3 Category 2: Risk of Regulatory and EMS 'Capture': Masculine Hegemony and Resuscitation Bias

Given the poor conceptualisation of the DV health burden by the EC discipline and the unacceptability of current EC approaches at all tiers of the EMS, the study considered "Risk of Regulatory and EMS 'capture' through masculine hegemony and resuscitation bias" as a possible and probable theoretical proposition in regard to the health sector response to DV. The historical lack of national, provincial and municipal level EMS responsivity to DV cases calls into question the policy responses to the stated regulatory imperative 'to protect the public and guide the professionals'. Linked to this is the issue of the EC professional scope.

The way in which DV prevalence and the EC health burden is conceptualized by the regulator's councillors and their acceptance of unfair, biased and dis-proportionate EC responses to GBV cases may create conditions that promote a kind of 'regulatory capture'. Regulation is the government's mechanism to protect the public. Regulatory capture is "the tendency of regulators to identify more with those they regulate than with the public they are protecting" (Lahey, 2011). The regulator is accountable to the public and to members of the profession and therefore endures a particular vulnerability to regulatory capture. Symptomatic of this is a heavy reliance on "input regulation - licensing, rather than output regulation - oversight of the practice of those who are licensed" (Lahey, 2011). The PBEC demonstrates these symptoms in its reactive approach and dominant discourse on accreditation and registration. Its inability to substantively ensure compliance with supervised practice for the majority of practitioners[88] and to facilitate supervision of any kind is telling of patient and practitioner vulnerability. Poor CPD[89] compliance suggests a policy-practice gap.

Currently, narrow, quantitative measures of performance, such as response times, are used by the EMS. EMSs may also demonstrate 'capture' when they do not consider the needs of the patient population they intend to serve. Regarding the EMS, there is an increasing need to assess the performance of EMSs using measures other than the time taken for an

[88] The BAA qualified persons enumerate 58,537.

[89] CPD: Continuous Professional Development is mandatory for all EC providers. Random audits by the HPCSA suggest EC is the poorest performing board with regards to CPD (HPCSA Interviews).

ambulance to arrive on scene (response-times). Patients and EC providers can help to shape new measures of ambulance service performance and in so doing, promote its relevance. Reassurance by the EMS is a case in point:

> The ability of the emergency ambulance service to allay the high levels of fear and anxiety felt by users is crucial to the delivery of a high quality service. Measures developed to assess and monitor the performance of emergency ambulance services should include the proportion of users reporting feeling reassured by the response they obtained. (Togher, O'Cathain, Phung, Turner, & Siriwardena, 2015, p. 2951)

The following discussion centres on issues emerging from the findings that perpetuate the risk of regulatory and EMS 'capture'. It includes capacity limitations for achieving GBV intervention goals, EMS ideology misaligned to social/societal determinants of violence and EMS regulatory imperatives/opportunities for implementing improved DV responses.

6.3.1 HPCSA Capacity for Achieving GBV Intervention Goals

The HPCSA interviews unpacked delays in some EC processes, further analysed below. Whist, administrative delays in policy development are also not in the interest of the public or administrative justice, publishing weak and un-evidenced policy is also harmful.

The DV screening protocol approval presents a case of bureaucratic delay as the process spanned three years and four months. It is noteworthy, as a case, no other clinical policy/ guideline in EC have taken as long to final approval, neither has it been necessary to field three legal opinions (one internal, one external-pro-bono, and one external-commissioned) for a single clinical guideline. It would appear that the draft protocol must have raised sensitive ethical issues or highly contentious legal issues. However, it did not. It sought to empower EC cadres with the knowledge and skill of routine screening, a safety risk assessment and a crisis intervention algorithm. There were two major reasons for the delays: The first was a weak arguably masculine[90] opinion, devoid of a public law lens that necessitated two other legal opinions[91]. The second reason was the non-response of the Medical and Dental Board (MDB). It is interesting that for any bio-medical intervention approval, the process is streamlined and efficient but the bio-psycho-social approach of the

[90] This was on the basis that the opinion is not protective of women and children.

[91] Annexure 14 provides the HPCSA consent to consider these legal opinions, without breaching of non-disclosure agreements.

screening tool proved to be a challenge for the legal department of Council. To elaborate, delays in comment from the MDB undermined the autonomy of the PBEC, and consequently the HPCSA did not serve the public interest, considering the relative EC non-action whilst mortality is estimated at 3/day[92]. Notwithstanding the above, the protocol was eventually disseminated in the HPCSA mouthpiece, 'The Bulletin', to all (>70000) registered HPCSA practitioners with the claim that the new guideline "significantly enhances professional accountability" (Vinassa, 2013).

The structures of Council have been reported to be counterproductive to the PBEC functioning. The case above is a case in point for HPCSA capacity. It is quality assurance mechanisms that appear to be lacking. Synergies between the PBEC and other stakeholders in GBV education and management were considered possible. To this end, a community of practice in DV handling emerges as logical and inclusive of EC. Community of practice derives social capital. The HPCSA is expected by educators and clinicians to be able to provide leadership and stewardship for the EC profession in terms of achieving GBV goals.

The HPCSA legal opinion (1) was that the draft DV screening protocol would be *ultra vires*[93] the Health Professions Act, 1974; that it would impose obligations on practitioners that would encroach on the role of the police imposed by the DV Act 116 of 1998; that the implications of screening would increase the professional time spent on scene (with cost implications); and that the draft protocol needed further drafting. All these misgivings were independently and twice refuted as having no legal basis. 'Poor' legal counsel may well make mockery of the public interest. Training in GBV legislation and advocacy may build capacity within the HPCSA. Even Magistrates undergo training or receive guidelines for legislative interpretation (Department of Justice & Constitutional Development, 2008). The PBEC must be strengthened with a public law lens and a moral code (Fedler & Olckers, 2003) if it is to mitigate the risk of regulatory capture.

There is a HPCSA interpretation of the issue of DV and its health consequences and a response (or non-response) to it. There is value in understanding if there is a masculine

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[92] Over 3 years and four months, with a femicide rate of 3/day = an estimated 3600 lives lost.

[93] Beyond one's legal power or authority

lens (maleness) through which the HPCSA carries out its duties. The HPCSA is an organ of statute and as such it is constitutionally obligated to gender equality. Structural changes (at the level of gender representation) and the HPCSA strategic policies are intended to offer protection against a masculine organisational identity. Still, there is a reliance on the "type of people" at council to mitigate engendered perspectives.

Insight into how the HPCSA deals with its own practitioners that are accused of perpetrating GBV may be telling of the engendered and reactive nature of the regulator. There had been a number of reports where ambulances and response cars were used in the abuse of patients. The council approach in these cases has been procedural and reactive. There was no feedback mechanism to systemically address engendered attitudes and values of practitioners, in the name of jurisdictional limitations. The notion of 'gender-mainstreaming' that GBV matters should not be some peripheral option but infused in everything done as a health organisation.

6.3.2 EMS Ideology Misaligned to Social Determinants of Violence and its Sequelae

The HPCSA motto is 'Protecting the Public and Guiding the Professions.' The vagueness of the term 'public' in public protection provides a 'faceless' beneficiary. Programming interventions with a well-defined at-risk population such as women and children are likely to provide a necessary focus, given the special circumstances of violence against women and children. That a model of gender mainstreaming is opted for, GBV should not be some optional add on; that it needs to be infused in all decision-making is an ideological shift supported by participants.

This shift would be profound as it goes beyond vertical programming of gender sensitive endeavours toward the need for a progressive/transformative regulatory lens - an ideological and organizational shift leftward. However, the pace and depth of this shift depends on whether it "find(s) its way" 'there' or if it is deliberately institutionalised. This notion of DV policy passively 'finding its way' was uttered by the HPCSA interviewee, and may be undermining of any commitment to its implementation. Gender mainstreaming recognises the all-pervasive and social constructions of GBV, and intends a 'counter-insurgent' social deconstruction of the factors enabling GBV incidence. Hence an

appreciation of the social and indeed societal determinants of violence is critical for gender mainstreaming and for the EC agenda. To this end the author recommended to the PBEC (Annexure 25), as a study output, the inclusion of interpersonal violence and specifically GBV as determinant of health in a position statement on Social Determinants of Health upon which future related policy may be predicated.

It would seem that some in the EMS hierarchy are in need of such convincing. Following the femicide of a HPCSA staff member, Ms Kgaladi, shot by her policeman husband (16 April 2012); the DV screening guidelines were released in the media (before Council approval), probably to suggest some sort of responsivity. The Western Cape "emergency medicine chiefs" [so-called by the SAMJ editor (Bateman, 2012)] offered comment that supports the notion of ideological misalignment above but does little to promote change in improving EMS responses to DV cases. Using the dyadic[94] and triadic[95] technique of congruity (Shoham, 2006), several incongruent positions emerged in their comments on the DV screening guidelines. The guidelines, although welcomed, "got a muted response from emergency medicine chiefs in the country's most brutal province last month" (Bateman, 2012). 'Muted responses' in the presence of high DV incidence hardly suggests a 'welcoming'. The experts had reservations as to how practical the guidelines would be in "high-pressure or dangerous situations encountered by their staff", but at the same time admit that "guidelines could not possibly address 'all the variable and dynamic' conflict scenarios".

Such 'variable and dynamic' conflict scenarios were encountered in the prospective cohort. In the cohort study, amongst the 233 (N) DV positive cases, 149 (66,82%) cases reported physical violence, followed by verbal abuse (n = 101; 45,29%), emotional abuse (n = 94; 42,15%) and psychological abuse (n = 48; 21,52%). The incidence of sexual abuse (n = 24; 10,76%) was almost as frequent as economic abuse (n = 23; 10,31%). For 21 cases (9,55%), the type of abuse was omitted, in error or by inexperience in reporting. A particular feature of DV pathology, these abuses are not mutually exclusive. DV therefore,

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[94] The dyadic technique of congruity achieves "consonance through excluding, defining and contrasting one part of the dissonant dichotomy with the other" (Shoham, 2006).

[95] The triadic congruity process involves the synthesising of a third consonant state out of the incongruent ones (Shoham, 2006).

distinguishes itself from non-DV related interpersonal abuse by the cumulative experience of multiple abuses. When asked to appraise to what extent the training had prepared the EC provider for screening of individual cases, in 109 (24,06%) cases, the training had prepared them extremely well; in 135 (29,8%) cases they were mostly prepared and in 47 (10,38%) cases they were somewhat prepared. Uncertainty prevailed in only 14 (3,09%) cases and 19 (4,19%) cases proved challenging to the extent that the training had not prepared them at all. For these participants, the cases were varied and the intervention (that includes protocol implementation) was efficient.

The focus group discussions revealed that the avoidance of DV cases was due to the crisis intervention skills being absent and a DV deficiency in the EC discourse. Upon reviewing of The African Federation for Emergency Medicine (AFEM) Handbook of Acute and Emergency Care (Wallis & Reynolds, 2013) it is noted that it only includes one page (of 1000) on child abuse and one page on 'Domestic and intimate violence victims'. Moreover, the "Manual of Clinical Paramedic Procedures" has no procedures for such patients (Gregory & Mursell, 2010).

> Robertson and Wallis said the guidelines were 'welcome and overdue', but doubted what real changes they would make in their contexts. They said their ambulance/ emergency rescue staff tended to avoid conflict, concentrating instead on the patient the moment this became possible. Said Robertson, 'They tend to use their normal streetwise savvy to settle people down and then treat the injured patient. These are very generic high-level guidelines. (Bateman, 2012)

The Head of Emergency Medicine for the PGWC, Prof Wallis, suggests the biomedical response "…to treat the injuries and send them on their way" is the default position of Emergency Medicine in general (not only EMS) and is qualified (or justified, perhaps) by their high case-load and trying circumstances.

> It's an issue for emergency medicine in general – if you see a woman that has some injury it's easier to adopt a "don't ask, don't tell" attitude – you don't want to open up a Pandora's Box; it's not wilful, it's just the easier way to deal with it. They're already working in a trying situation. The default is to treat the injuries and send them on their way. Their case load is very high. [Prof Wallis quoted in (Bateman, 2012)]

His assessment that the adoption of a "don't ask, don't tell" attitude is not wilful, just a more convenient way to deal with it does not withstand scrutiny as making the 'easier' choice would, in all probability, require a conscious decision of practitioner interests above patient

interests (hence the 'ease'). The concern is that the default of not opening Pandora's Box[96] returns the patient to the abusive home (with her jar of evil), without stopping the abuse but having stopped the bleeding (a critical, but decidedly minimum task). DV screening, one would argue, is intended to open 'Pandora's box' (te Kolstee, et al., 2004).

The then Head of EMS in the Western Cape, Dr Robertson is quoted as saying:

> They know their duties when it comes to reporting elder or child abuse and we promote the guidelines during ongoing training. The question is whether these (the injunctions) are actually carried out. They'll obviously document the nature of the incident which is handed to the hospital. It all depends on the intensity of the situation; they often don't have the time to transfer the softer information that may be important in the long run. We focus on main-line care – all those softer issues often fall off the bus. [Dr Robertson in (Bateman, 2012)]

It is an oddity that only elder and child abuse is said to be on the agenda. If the requirements of the policy are not carried out, surely, EMS management must monitor and ensure compliance? What is 'softer' information? How does this differ from 'main-line care'? This is suggestive of narrow, masculine conceptions of the EC role and an incongruent contrast of DV as 'soft' and other EC needs as 'hard' issues. The irony is that the sentiments above may perpetuate the same and are not in themselves affirmative or transformative of the EMS 'complicity' in DV cases.

> …the roots of violence were complex and related to an overwhelming prevalence of violence at all levels of society. The more one was exposed to violence, the more one perpetuated it – and [DV] was just one component… [Dr Robertson in (Bateman, 2012)]

Professional self-regulation is a normative feature of democratic practice. It is not immune to organizational (or individual) 'counter-steer', despite being an organ of statute. The challenge is the pursuit of ideological alignment within a social reality. It may be argued that HPCSA officials, councillors, EMS management and EC practitioners are also *not*, in the words of Judge Edwin Cameron, 'ideological virgins' (Fedler & Olckers, 2003).

Masculinity and bias of EMS design in a violent SA emerged as a consideration to understand EC responses to DV. It becomes possible in our climate of violence, for dominant masculinity, biomedical bias and the reactive nature of EC to influence the EC

[96] An artefact (jar) in Greek mythology, given to Pandora (the first human woman) that contained all the evils of the world.

architecture and design to the extent that it does not serve the interests of the public that are at risk for or victims of GBV.

> …the theory of distorted communication is therefore especially suited to the ways in which meanings are used to reproduce power even under explicit rules of equality and freedom. This is not to say that explicit rules are unimportant: they make it possible for overt forms of coercion and power to be constrained… (Bohman, 2005)

The inquiry into any gender dynamic/male dominance within the HPCSA was responded to in the negative by some of the participants but this relates to observations of overt unequal power relations or engendered decisions. Underestimation of the GBV phenomena, a lack of DV discourse (semantic gravity) in EC and a significant post-facto intervention bias constitutes a design flaw in current EC regulation and practice. In cases where ambulances and response cars are used to abuse patients, recollection of particular cases and how the Council has dealt with them confirms a reactive organisational approach.

The need for inter-board consultation or approval and subsequent Council approval sets time limitations on the progress of the PBEC. The HPCSA participant acknowledged the importance of developing the DV screening protocol (Annexure 1) because it cut "across all profession", indicating that… "we had to submit it to all 12 Boards for comment and input…almost all the boards supported it." The previous decision from the PBEC was that it created a negative impact on the public if we delay the finalisation of this protocol and that the PBEC "should inform medical and dental board that this delay is not in the best interest of the public and it will be referred directly to council and that was done."

Despite its autonomy the PBEC cannot operate independent of Council and in relation to some processes such as development of DV guidelines, independent of other Boards. Council may also set limitations on implementation.

6.3.3 EMS Regulatory Opportunities for Implementing Improved DV Responses

The legal/ethical premise for DV intervention by EC was not well understood by participants. The PBEC gives greater responsibility to do more lies is the fact that "…the first contact is the EC practitioner, it is very seldom that doctors visit houses."[97] The first

[97] Interviewee 1

contact is said to be important "…Because you can do so much. You can report to the authorities, report during handover. More people will know about the incident immediately"[98]. Shock is generated by practitioners who actively violate the public trust and abuse patients in the prehospital setting as "…those are people who should help when one is in dire need, because that is a point where people are vulnerable"[99]. It seems, when the practitioner is the perpetrator of GBV there is shock and dismay, yet the historical non-action and consequent 'complicity' by the profession with regards GBV has drawn little attention by the profession (Naidoo , 2007).

To prevent practitioner perpetration of GBV it was suggested that "…during the selection of students there should be psychometric testing in order to select right people for the job". The absence of selection screening and the skewed workforce toward the basic life support practitioners "compromises the patient….the degree practitioners do not always get to the patient. Training will address this…should the short courses be retained they would need to be upgraded because this cannot be addressed in one month." CPD might be a way of promoting DV discourse in EC, but does not guarantee global coverage, unless DV protocol training is mandatory in terms of CPD. CPD is a council competency and their support in this endeavour will enhance the mandate of public protection through practitioner guidance.

DV protocol/guideline development will help to personalise the responsibility of EC providers. Regulation 2 of the Scope Regulations of The Health Professions Act (Health Professions Act , Act 56 of 1974) deems acts that pertain especially to the profession of EC as:

a) The identification of the EC needs of a person in an EC situation;
b) the evaluation of the EC needs of a person in an EC situation with due regard to his or her safety and the implementation of precautions to ensure his or her safety;
c) the rescue of a person from an EC situation or from a potential EC situation;
d) the provision of EC to a person in an EC situation; and

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[98] Interviewee 2

[99] Interviewee 3

e) the prevention of further injury to, and the combating of possible complications of an illness or injury, to a person in an EC situation.

Section 15 A(c) of the Health Professions Act 56 of 1974 allows the PBEC to control and exercise authority over any matter affecting the EC profession. The protocol was found to not be contrary to legislation regulating health care providers (including the National Health Act) and encouraged a multi-sectorial approach to the identification and management of DV. There were no legal obstacles to DV screening. The protocol enabled scope (c) above, to prevent recurrence and associated health risks. The notion of usurpation [100] by practitioners of police responsibilities was not upheld by the PBEC as the police do not have a monopoly over DV responses (Domestic Violence Act, Act 116 of 1998). EC providers may be able to play a role when the police cannot (particularly in the event of reticence by victims).

The PBEC framework guiding decision making around protocols or strategic changes in direction "…is deliberation, discussion, consideration…" of EC matters and their legal and human rights implications. The unnecessary delay of protocol development undermines the autonomy of individual boards and the common strategic goals of public protection and practitioner guidance. The DV screening protocol is consonant with the PBEC Revised Strategic Plan (HPCSA, 2012) wherein professional practice through an evidence-based scope and a human-rights based approach is advanced.

[100] Taking someone's power or property by force

6.4 Category 3: EC Professionalization: Toward a Community of EC Practice

DV, from an emergency and forensic medicine perspective, satisfies the case definition for an EC situation that obligates an EC response. What might the professional needs and responses be by EC actors in DV contexts? The preceding discourse, elevated from the abstracted data suggests a move from '*professionalization of EC toward a community of EC practice'*.

One encompassing endeavour to provide sophistication in the response to GBV is to professionalise responses. In this analysis, the typologies of victims, perpetrators and actors in the GBV response; in the context of interpersonal violence, is presented. GBV affects every aspect of human society. Considering the typology of victims, it becomes apparent that GBV cuts across the lifespan, to the extent that foetuses and even the elderly are not immune to the effects of interpersonal violence. The perpetrators too are demographically widespread. The legal, political, economic, social, educational and health contexts and dynamics of GBV require that multi-faceted approaches be employed. A heavy reliance on singular approaches, such as criminal-justice responses, is 'inefficient' and unsustainable.

> "The unabated incidence and high prevalence (Statistics South Africa, 2011) suggest a nation of GBV victims; and by rational conjecture, a nation of perpetrators. This dichotomy cannot hold, as the social, health, economic and justice system cannot cope with the criminalisation and [simultaneous] victimisation of a significant part of society" (Naidoo & Nadvi, 2013).

Hence, there is a need to shift from the narrow conceptualisation of 'professionalism' to a more transformative discourse on 'a community of professional practice'.

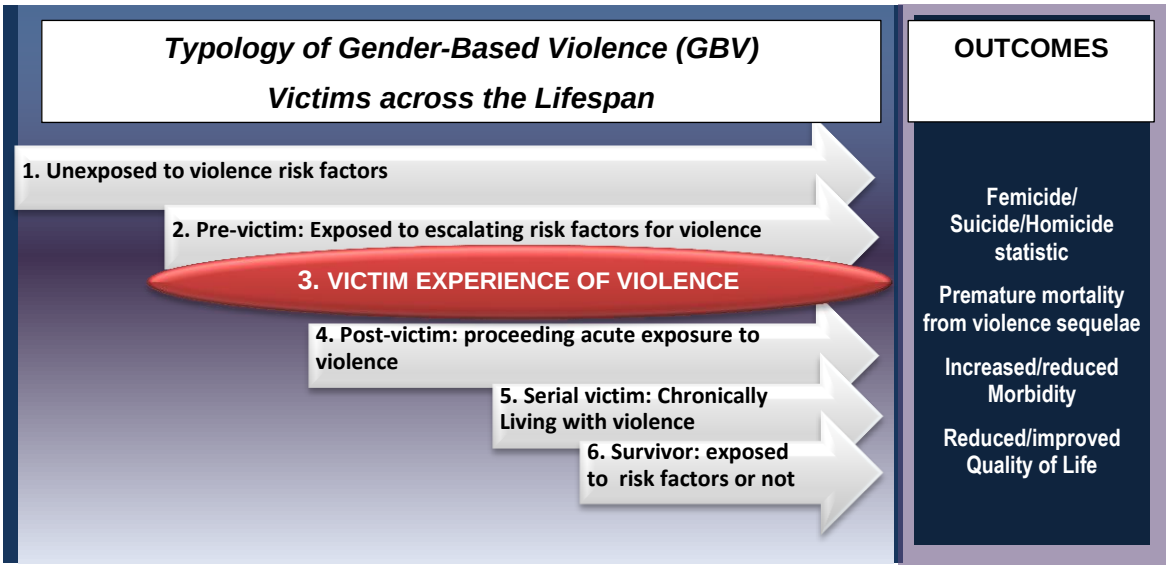
6.4.1 Typology of Victims and Perpetrators

In landscaping a typology of victims, the technique of process tracing - identified as part of an intelligent research design (Hancke, 2009) - is helpful in linking major lifespan periods before and after the direct experience of violence on the basis of gender. Figure 33 traces GBV across the lifespan of the victim. Such periods are low fidelity, no doubt; however by linking these periods to outcomes, a macroscopic view emerges, suggesting that any leftward shift in interventions, in terms of lifespan, will have the prevention-exposure benefit of more exposure time. The health bias in the outcomes is deliberate as this has a health-

economic and socio-political motivation to do more for GBV prevention, on the basis that it is a matter of life and death.

Period 1 has the most opportunity for prevention messaging. The 'Pre-victim' typology (2) is exposure to risk factors for violence. The nature of GBV indicates that this will most likely be escalating for an indefinite period. This is followed by the direct experience of violence, commonly described as a battering incident or an 'explosion' of violent behaviour. Following this, the post-victim exists during the acute period after the battering incident.

Figure 33: Typology of GBV victims across their lifespan

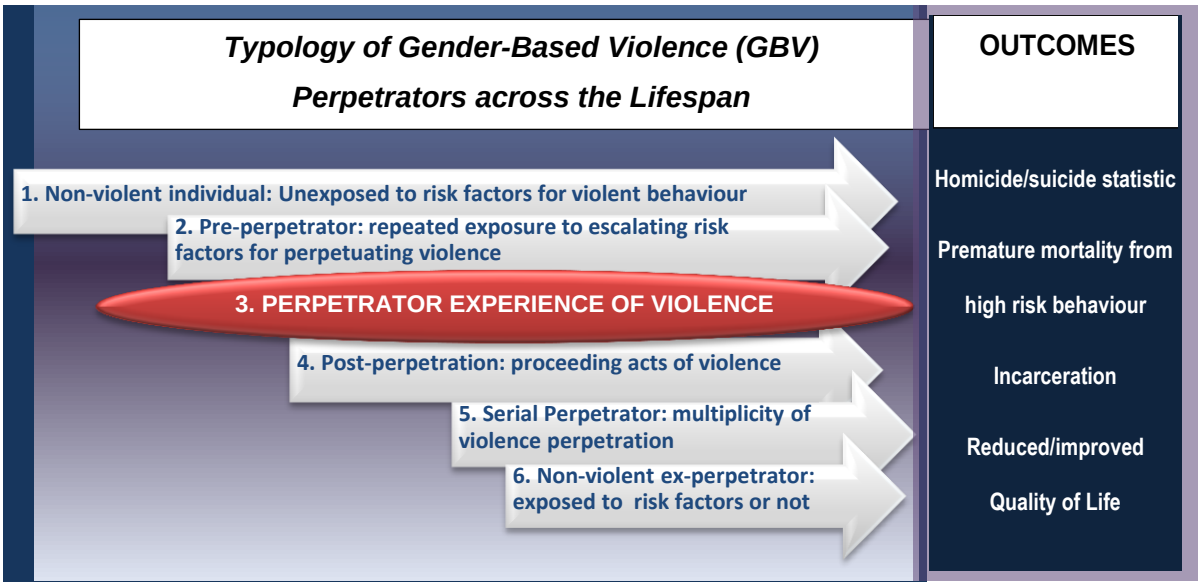


How this is managed and the decisions taken will influence whether the person has to live chronically with violence as a serial victim (5) or transcends her own experience of violence to become a survivor (6) that may or may not be exposed to risk factors. The entire framework exists in an ambivalent societal context where violence is seen as abhorrent, yet is enabled and reproduced. The outcomes associated with direct exposure to violence or living with risk factors of violence are femicide or premature/delayed mortality from sequelae of violence. An increase or decrease in morbidity and quality of life is dependent on the mediating factors.

Figure 34 represents a typology of perpetrators with the violence perpetration as the defining descriptor. These periods in the perpetrator lifespan are aligned with that of the

victim, for the perpetrator and victim co-exist. These typologies categorise victims and perpetrators in terms of a lifespan perspective of GBV and has relevance for contextualisation of health promotion of GBV by EMS actors/responders.

Figure 34 : Typology of GBV perpetrators and outcomes across the lifespan



6.4.2 Typology of Actors in GBV Intervention

Responders are a microcosm of the patriarchal society from which they emerge. The belief in preconceptions and fallacies that promote hegemonic masculinity and contribute to the perpetuation of abuse (by omitting duties of care or by commission of harmful acts) is prevalent even amongst professionals whose job it is to promote public safety and patient safety (Naidoo, Knight, & Martin, 2013; Sugg, et al., 1999). Bollen *et al*. suggest that emergency rooms, clinics and district surgeons require a change in attitude and greater sensitivity (Bollen, et al., 1999). Studies conducted in the Western Cape, where the provincial health department claims a level of efficiency not commonplace in the rest of the country, find that recognition of women experiencing interpersonal violence is very low in

primary care (less than 10%)[101] and they argue for clinical case finding (Joyner & Mash, 2012a; Joyner & Mash, 2012b). In a study of EC providers:

> …"insight into DV was severely lacking amongst [EC providers] who have a high rate of problematic assumptions and myths about DV. [EC] practice is characterised by inadequate assessments for patient safety, inconsistent and superficial management of victims of DV with multiple missed opportunities for intervention. By their own admission, participants did not feel adequately prepared to assess and respond to victims of GBV. Fundamentally, the current training and clinical practice are inadequate to meet the emergency and health promotion needs of DV victims in the prehospital environment. Participants reported the above EMS characterisations as barriers to the implementation of a prehospital protocol for DV management." (Naidoo, Knight, & Martin, 2013a).

Secondary victimisation by individual responses manifest in a multitude of ways. These include: violating confidentiality, disbelieving testimony, inadequate/irresponsible/non-referrals, blaming the victim, punishing (persecuting) the victim, inadequate risk assessment, and by having an attitude that is not GBV sensitive. This supports the ideology of professionalism as opposed to an unhealthy reliance on professionals (by registration) who lack a GBV specific orientation.

The spectrum of actors in GBV cannot be restricted to the victim alone. A 'professional' outlook will have to include the perpetrator. Men claim that they feel *indicted by, rather than invited* to the GBV discourse, and yet the ultimate prevention of interpersonal violence resides with men[102]. The reliance on criminal justice to punish and rehabilitate DV offenders is misplaced as evidenced by high rates of recidivism, mortality and survivor affect outstripping any jail term. Rehabilitation evaluations show current rehabilitation strategies as ineffectual (Naidoo & Nadvi, 2013).

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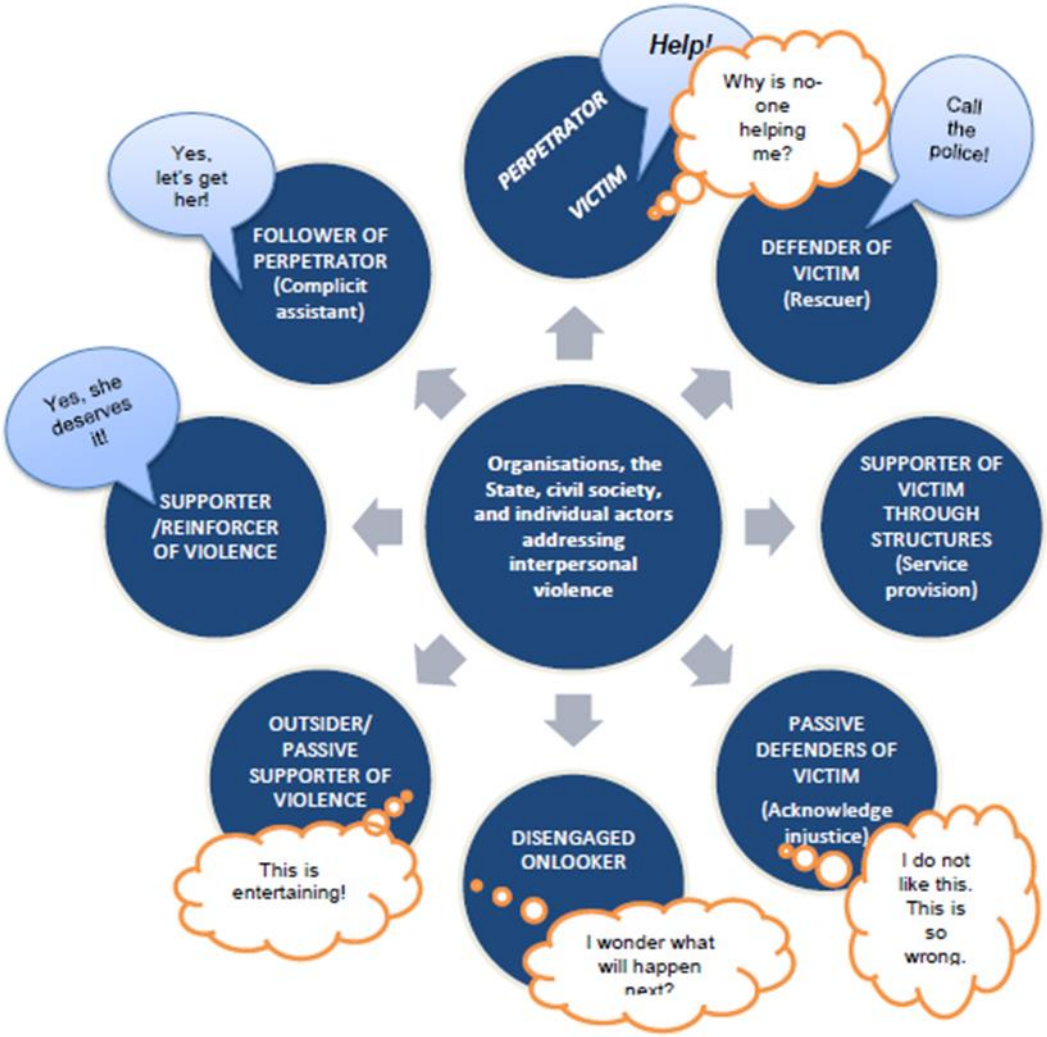
[101] The cohort study also documented low detection rates. Under the most stringent assumptions, the "post-intervention" DV detection rate among EMS workers who participated in the training is estimated at 1,51% (a three-fold improvement from the no-intervention cohort). Considering only the 75 EMS workers who returned screening forms, the estimated DV detection rate would be 194/4046 = 4,79%. This however, was a nine-fold increase in DV detection from the non-intervention cohort, and is the first result in RSA to validate prehospital screening training and implementation.

[102] This notion strongly featured in the Institute for Justice and Reconciliation (IJR) round-table conference in 2013, at which I was a speaker at the Sarah Baartman Centre for Women and Children in Cape Town, South Africa.

Figure 35 presents some actors that potentially enable or disable the GBV cycle. Akin to Ancer's 'cycle of bullying and bystanders' in a bullying context (Ancer, 2012), individuals working in GBV prevention must have due consideration of impact on all actors represented. The data suggests that EC providers, as a collective, play all these roles, hence the role confusion and lack of a critical mass to intervene and discourage domestic persecution.

Figure 35: Typology of actors and role identification in GBV perpetration and mitigation



EC providers may project some or all of these roles (paralleled with 'bullying relationships'). Working in EMS organisations embedded in communities, providers of EC have the

opportunity to ‘defend’ and ‘support’ the victim whilst enabling access to services. This is consistent with expectations of a rescuer but is not the current experience. By acknowledging the injustice and health consequences of violence, the EMS and its membership can, during non-emergencies, act as ‘passive defenders’ of victims. However, ignorance of the epidemiology of violence and the ethical imperative to contribute to the safety and wellbeing of victims may result in a ‘disengaged onlooker’ role that essentially causes the rescuer to regress to a bystander role.

Unlike bullying, DV occurs mostly in private spaces, so if aware of its occurrence, bystanders and EC providers cannot claim a ‘diffusion of responsibility’ (Ancer, 2012). Not knowing how to respond coupled with an organisational culture of hegemonic masculinity, could translate into ‘passive support’ for the violence as entertainment or ‘normal’. Active ‘support’ for the violence occurs when individuals or organisations believe the victims were deserving of the violence. This is likely to result in poor or non-responses to the perpetuation of violence. The role of ‘following the perpetrator’ renders the follower complicit in the acts of violence.

The challenge is in promoting counter-clockwise positioning from following of perpetrators to defending of victims. It was established “that a preference for altruism, high-ranking positions for self-actualisation and social relationships, lack of dominance of financial values and lack of interest regarding the value dimension of control could be expected” (Tóth, 2009). Such a value attitude assessment has not been done for South African EC providers, so guiding policy remains a ‘low-hanging fruit' to challenge values toward DV prevention. Millar (2014), in a South African critical realist study of emergence of EC practitioner identity documents three phases in the emergence of graduate identity (first-year student, student-graduate and student-professional) and that through transformative agency[103], change in identity was possible.

A strong sense of personal efficacy is related to “better health, higher achievement, and more social integration” (Schwarzer & Gutiérrez-Doña, 2000, p. 458). Perceived self-efficacy[104] represents the key construct in social cognitive theory (Bandura, 1997). This

[103] Transformative agency is a participants' capacity to take purposeful actions to change their work activity.

[104] Self-efficacy has been applied to such diverse areas as school achievement, emotional disorders, mental and physical health, career choice, and socio-political change.

construct was selected in the survey[105] as behavioural change is facilitated by a personal sense of control[106]. This implies that if people believe that they can take action to solve a problem instrumentally, they become more inclined to do so and feel more committed to this decision. The perception of medical capacity scale[107] appraised outcome expectancies of the possible consequences of DV-actions within the health system but perceived self-efficacy pertained to participants' personal action control (or agency) to respond to DV[108] (Annexure 8).

> A person who believes in being able to make an event happen can conduct a healthier and self-determined life course. This 'can do'-cognition mirrors a sense of control over one's environment. It reflects the belief of being able to master challenging demands by means of adaptive action (Schwarzer & Gutiérrez-Doña, 2000, p. 458).

Alternately, it can also be regarded as an optimistic view of one's capability to deal with stress, i.e. the perception of self-efficacy may be a coping mechanism to avoid the helplessness and lack of agency that comes from the disempowerment[109] of EC providers. It would seem, that the EMS has very specific scopes of practice that defines the EC providers *'job'*. It has not however successfully defined the EC provider's *'role'* in responding to DV cases. Perhaps this study, the screening protocol and other policy recommendations will assist in role definition at the level of the regulator.

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[105] The second multi-item scale is based on survey questions 36-40 and measures an EMS worker's self-efficacy for dealing with DV cases. Each item was scored from 0 to 4, with '4' corresponding to 'Strongly Agree' (the most desirable response indicating high self-efficacy) and '0' corresponding 'Strongly Disagree' (the least desirable response indicating low self-efficacy). Thus each respondent had an overall score between 0 and 20.

[106] Reciprocal determinism holds that 3 factors influence behaviour: the environment, the individual, and the behaviour itself. Essentially, Bandura believes that an individual's behaviour influences and is influenced by both the social world and personal characteristics (https://www.verywell.com/what-is-reciprocal-determinism-2795907).

[107] The third multi-item scale is based on survey questions 41-45 and measures an EMS worker's perception of the medical capacity for dealing with DV cases. The scoring system was identical to that of the EMS worker self-efficacy scale.

[108] The Cronbach's alpha statistics for the EMS Worker Self-Efficacy Scale and the Perceptions of Medical Capacity Scale were 0.825 and 0.907, respectively. This indicates that these two scales do provide internally consistent measurements of the quantities they seek to measure.

[109] Such disempowerment may result from a lack of training, experience, narrow scopes of practice (perceived or real) and biomedical approaches to health care.

6.4.3 EC Professional Attributes in GBV Responses

The classic professions are associated with a publicly made dedication, commitment or promise to serve. Characteristics of the professional as being that of having a systematic body of knowledge; authority usually conferred by an Act or law; community sanctions; established codes of ethical conduct; and a unique culture associated with the profession (Reynolds, 2004). As occupations rise, they contribute to social change. The process of professionalization requires the following steps (de Vos, et al., 2011):

- Full time activity at the task
- Establishment of university training
- Establishment of a national professional association
- Redefinition of the core tasks
- Conflict between the old and new personnel
- Competition between the old and emerging occupations
- Political agitation in order to gain legal protection
- Establishment of a code of ethics

The attributes of a true profession are summarised in Table 18. An analysis of these professional attributes as it relates to GBV intervention is also provided and paints a picture of non-compliance with professional criteria. Whilst this study has confirmed the value of DV screening, i.e. improved detection; it is critical of the system in which such clinical power resides. The principle of justice is the moral obligation to act in a manner where there is fair adjudication between conflicting or competing claims resulting in an outcome that is equal, equitable and fair. Competition for scarce resources may limit timely access to appropriate care and could be perceived as discrimination and unfairness by the victim seeking help. Factors such as the victim's gender, race, education, income and geographical location are closely linked to their access to care.

The principle of justice emphasizes that victims in similar situations should be treated the same and that benefits given to one group should not be at the expense of another. Justice in the ordinary sense (at the individual level) and social justice (justice at the societal level) are mutually inclusive. The principle of sufficiency is critical in the appraisal of current DV practice. The absence of policy, procedures and care-bundles renders DV responses insufficient. Hence the moral reasoning tool of regulatory/policy compliance, aligning

conduct to character and satisfying conscience may prove a useful *aide-mémoire* when conflicted in EC practice.

Table 18: Analysis of professional attributes[110] and responses to GBV by the EC profession

Attributes of true Professions	Analysis of professional attributes in the context of GBV intervention
a) Theoretical and practical objectives	These exist but are seriously undermined by the lack of professional identity of the interventionists. Objectives are organisation specific and are nuanced by the feminist/political/religious/racial and resource considerations of the organisation.
b) A main goal of public service	The goal of servicing the public is presently at the level of the intention or motive, but services are inconsistent, disparately located and do not address the lifespan perspective mentioned above. So, the interventions do not serve the entire public and some interventions contribute to dis-service if not ethically and scientifically formulated.
c) Intellectual work requiring a high standard of accountability	There are extremes of work. At the one end are crisis interventionists who may be lay people with or without their own history of abuse. Crisis interventionists may also be psychologists, police officials, social workers and medical personnel. Their interventions are not intellectual but pragmatic or procedural. At the other extreme are academics contributing to the knowledge economy with empirical, theoretical and practice studies. The challenge of a high standard of accountability remains.
d) Offering standardised training, with techniques communicable by education	Although GBV interventions are communicable by education, standardisation of training is not a feature as no consensus on training content and practices exist.
e) Restriction of practice to a professional group that projects a strong group consciousness which gradually	In South African EMS, there are no large professional associations to sustain group culture, with regards GBV. In fact, the GBV intervention group culture is not defined. Established professions and their scopes of practice are protected but what arguments can be made against (unregistered) lay people who wish to provide crisis intervention for victims of GBV?

[110] Attributes are adapted from de Vos, et al.(2011).

	develops into a group culture sustained by professional associations	This is particularly so when their own profession is unable to meet the needs of victims. The case of psychology is a case in point. There are unlikely to be enough psychologists, EC workers and social workers to be effective in GBV cases.
f)	An accepted code of ethics	There is no generally accepted/universal code of ethics in GBV intervention.
g)	A codified and systematic body of professional knowledge underpinning the profession and having been effectively internalised by new members	Hardly codified, a systematic body of evidence exists. Scientific journals dedicated to understanding violence and its prevention exist. As there is no regulation and accreditation of training, there are no guarantees of evidence-informed curricula. Whatever the state of research, it is the lack of evidence-informed policy that is apparent.
h)	Authority recognised by the clientele of the profession	There is no singular authority recognised by the clientele of the profession. Legislation such as the DV Act (Domestic Violence Act, Act 116 of 1998), the impending Trafficking in Persons Act, the Criminal Procedure Act and the Bill or Rights (Constitution of the Republic of South Africa, Act 108 of 1996) are the empowering legislation that enables certain legal intervention practices. It is the Health Professions Act 56 of 1974 that obligates the provision of safety.
i)	Broader community sanction and approval of this authority	This outcome of - yet to happen - broad and narrow consultation is part of a consultative process in bestowing authority and regulating licensure.
j)	Commitment to continued study	GBV as a health problem is not a prominent feature of medical curricula. Feminist studies and critical discourses do include GBV as a theme, but no clearly defined study trajectory exists for new entrants in EC.
k)	Full autonomy, financial and otherwise	The current funding that is assured is for the work of the Ministry of Women, Children and People with Disabilities, lest parliament decides otherwise. The Departments of Health and Social Development operationalize some projects that address some of the intervention opportunities presented in the lifespan perspective above. The movement against GBV locally and globally is underfunded, given the magnitude of the problem, its impact and outcomes and the disproportionate fiscal and donor spend on other competing funding priorities.

6.4.4 Social Capital, Social Justice and EC

Social capital is the expected collective or economic benefits derived from the preferential treatment and cooperation between individuals and groups, normally, non-governmental networks. EC could facilitate referrals to NGO's. The main idea is that social networks have value. Social contacts can affect the productivity of individuals/groups (Putnam, 2000) but this implies the need for functional networks and a shared investment, as well as physical/intellectual resources.

Community of practice (COP) anticipates moving from pockets of excellence to an escalating trajectory of excellence; rapidly improving access; building tacit knowledge; and shared accountability for services rendered (Wenger, 1991). Efficiency is defined as the amount of health obtained from a given amount of health inputs (Grossman, 1999). Indeed, COP facilitates the big picture perspective and synergises the roles of the care givers. COP is central to the sustainability of care for victims.

Fairness is a foundational consideration of justice (Dhai & McQuoid-Mason, 2011; Cameron, 2014). Individuals and institutions - public, private or civil society - working in the field of GBV intervention must embrace the concept of fairness as a central ideology in the pursuit of justice. The justice claimed for the victim should not be at odds with the justice claimed for the society and for the perpetrator that it creates. The notion that violence is socially constructed compels us to have regard for the perpetrator as well. This is not to shift emphasis from the victim. On the contrary, a focus on the perpetrator (or risk factors) is more efficient and sustainable as an intervention as it is directed at root causes and not effect. A focus on victims alone or disproportionately is counter-productive to the victims' interests. "After all, stopping the bleeding does not begin to stop the abuse*"* (Naidoo, Knight, & Martin, 2013a, p. 90).

The nature of objectivity in practical reason is another consideration for institutional justice (Sen, 2010). A requisite component in the conception of objectivity is the establishment of a public framework of thought sufficient for the concept of judgement to apply. Conclusions can then "…be reached on the basis of reasons and evidence after discussion and due reflection" (Rawls, 1993, p. 110). Third, 'the moral powers' that people have precede the realisation of justice (Sen, 2010). Moral powers relate to the capacity people have for a sense of justice and for a conception what is good. The moral power enables one to

transcend that which is rational to that which is reasonable. Whilst this is inherently an individual trait, it is through organisational policy and procedures that a climate of moral reason can be fostered. It is people that conceive of, write and articulate these policies. If these policies do not intend to promote injustice, Sen asks: then why do they? Part of the moral power dynamic, according to Sen (2010), is the infectious claiming of responsibility. It remains to be seen what EMS will claim.

Also a prerequisite of justice is the prioritization of liberty. Individual liberty is central to individual freedom. As a basic necessity of the practice of public reasoning, liberty must be prioritised in organisations, or else the social discourse is driven underground. However, such freedom also carries the irrevocable need for accountability. Human freedom is about the opportunity to do what one likes with one's own life. The potential tension here is between the interests of the individual and the interests of the organisation. Procedural fairness as a prerequisite of justice shifts the focus from outcomes to processes. Outcomes may be unjust, but this is often the result of unjust processes. Justice, then, is not simply an outcome - it is borne out of fair processes.

Finally, the…"difference principle indicates the importance of equity in social arrangements so that attention is drawn to the predicament of the worst off people" (Sen, 2010, p. 64). These social arrangements could relate to the EMS organisation. A case of rape certainly deserves more police attention than a case of a stolen car. Sadly, the loss of a motor vehicle is more convenient to conceptualise for the police than the loss of dignity, bodily integrity and the right to safety. As a rule of law: he or she who alleges must prove. The missing car proves the loss, but the rape victim must still prove the allegation. The difference principle does require the worst off to be identifiable. Therein lays the risk of secondary victimisation.

6.4.5 Training/Accreditation/Licensure/ Professional Registration

The majority of patients (n = 333; 73,51%) screened by the EC providers that were enrolled in this study held the view that EMS should not screen for DV. This lay person perspective does not necessarily imply that EMS should not. Perhaps, if they had more confidence in the EMS role and function in DV cases, the DV detection rate might improve. Training is crucial to building EMS capacity to screen for DV. When asked to appraise to what extent the training had prepared the EC provider for screening of individual cases, in 109 (24,06%)

cases, the training had prepared them extremely well; in 135 (29,8%) cases they were mostly prepared and in 47 (10,38%) cases they were somewhat prepared. Uncertainty prevailed in 14 (3,09%) cases and 19 (4,19%) cases proved challenging to the extent that the training had not prepared them at all.

Professionals usually have a formal education at a university with prerequisite curriculum that delivers a systematic body of highly complex and sophisticated knowledge with rigorous assessments prior to entry into the profession. Professionals practise their skills to the point of mastery, and continue practising them to improve and stay sharp. On-going education is necessary to stay abreast of new developments and trends in the professional arena. Critical self-reflection and appraisal ensures continuous quality improvement, growing excellence and compliance with the code of conduct. Professional autonomy (the right of the profession to control its work) is founded on three claims. Firstly there is a degree of skill and knowledge involved in professional work. Secondly, professionals are trusted and work without supervision. Thirdly, a profession can be relied upon to self-regulate its members who act unethically or who perform incompetently (Donaldson, 2008).

“There is an urgent need for additional research of the needs and best methods to educate and train paramedics to appropriately respond to IPV cases.” (Sawyer, Parekh, Williams, & Williams, 2014, p. 32). The above Australian finding also found low IPV detection rates and poor self-efficacy and knowledge regarding IPV, as echoed by this study. It would seem, globally, the EMS value in responding to DV cases is underdeveloped but emerging. A study in a Turkish ED suggests: “Attention must be given to the legal aspects and clinical manifestations of IPV. The training program should also include a module on gender roles in order to improve the attitudes towards IPV” (Aksan & Aksu, 2007, p. 350).

In terms of simulated practice, a major paedagogic tool in EC, real-world interventions such as oro-tracheal intubation, defibrillation, synchronised cardioversion and intravenous therapy could be undertaken. EC equipment was on hand but rarely completely applied. The clinical decision seemed to be of greater value than the technical skill itself. A narrator, in the form of an instructor or a fellow student would narrate the set of circumstances needed to create an EC context with which the student must interact. This included the provision of information on scene setting (such as a house on fire, or street corner, signs and symptoms (such as excruciating chest pain or stabbed chest; shallow/fast breathing)

and patient responses to history taking and treatment (such as reduced heart rates from treatment of shock with fluids).

These simulations have the potential to be low, moderate or high fidelity simulations. Fidelity refers to the level of realism in terms of timing, presentation, clinical interventions, patient responses and outcomes. The observations made were all of low to moderate fidelity simulations. There were no patient actors and narration was rarely scripted. The organic nature of the simulation progression showed narrow concern for accountability, preparedness, scaffolded scenarios and reflective practice. It suggested frequent exposure or conditioning to the desired approach for specific resuscitation conditions. All simulations enabled easy access to patients, preventing exposure to hard-to-access cases such as those of DV where the perpetrator is present during the consultation and controls the flow of information for the purpose of concealing the DV or demonstrating omnipotence.

The simulation venue is intended to be part of a simulation laboratory and the laboratory is intended to be a crucial space to efficiently empower students with an EC approach in the interest of patient safety and practitioner efficacy. The extent to which it is a place of learning versus a place of conditioning emerged as a concern. The setting is a resource for engaging in EC activities not specifically intended (but not necessarily inappropriate) in that setting as the participants conduct is not scripted. Yet, it would appear that the learning of medicine was shallow or procedural and the conditioning of EC responses was deeper. A heavy reliance on this mode of training may therefore prove counter-productive to the pursuit of professionalism in EC.

There are differences between how participants organized their activities when they are on their own as the senior clinician, as the junior assistant or as part of the crowd witnessing the care provided. The student-clinician would independently manage the scene. He/she would make all assessments and decisions, including instructions to the assistant and requests to the hospital/communications centre or support services. The assistant, in stark contrast, is the disempowered helper who will act only upon direct instruction and supervision. The unintended consequence may be the promotion of learnt helplessness[111]

[111] Learnt helplessness refers to one's helplessness to avoid negative situations.

and the negation of a team approach, as the assistant is purely reactive and not constructively debriefed.

The regulation of any profession is dependent on the requirement of the professionals to register with a professional body or society. Established professions are regulated by Acts of Parliament (e.g. Health Professions Act , Act 56 of 1974) that require all professions mentioned in the Act to register with a professional body. The professional body publishes regulations in keeping with the prescripts of the Act and in so doing would govern the profession by stipulating the standards for education and training, keeping registers of its members, determine and maintain standards of professional practice and conduct, including ethical rules and codes of conduct related to the profession. A scope of practice delineates the roles and responsibilities of practitioners and would be regulated by statutory councils that govern professional practice (Nixon, 2013). Complex tasks would require higher cognitive abilities that would have been acquired through a combination of education, experience and reflective practice. The benefits of registration and regulation by a professional body include the benefit of a professional status, inclusive of the right to practise the profession, the assurance that no unregistered person may practise and the credibility that assures a competent professional who may command a reward for service provided.

6.5 The Risk-Need-Responsivity (RNR) Model of DV Response by EC

Further abstraction of the data revealed the potential for a conceptual practice-model of DV response by EC: The Risk-Need-Responsivity (RNR) Model.

The EC practice dichotomy is to provide advanced life support or advanced medical rescue and, nuanced by inter-facility patient transfers, it is usually in the prehospital context. In both instances, the primary concern is relative safety from hazards, given that emergency contexts are unsafe by nature. A process trace reveals upon gaining access to the patient, the priority is to stabilise the patient by assisting compensatory mechanisms and mitigating sequelae of the pathology. This is done by identifying, removing or mitigating risks and identifying and addressing the EC needs such as oxygenation and ventilation, blood volume replacement or pain relief.

Emergency medicine is claimed to be the only the discipline with universality and responsivity at the point of need (Christopher, et al., 2014). This is only an accolade if, in the context of DV, what is being provided sufficiently and judiciously satisfies the need of the DV victim. The evidence in chief (in this study and preceding ones) is that this just is not so (Naidoo, Knight, & Martin, 2013a), but that interventions do produce improvements.

The trend in the simulated practice observations was to exclude hazards, call for help, determine alertness or consciousness of the patient, secure the upper airway, exclude lower airway pathology, and assess the heart (pump) for function and performance, blood vessels (pipes) for integrity and extent of blood loss (fluid). Operating in a quality circle approach of plan, do, check, act, treatments are implemented and evaluated in real time. It seems that DV victims benefited most from EC when mortally or critically injured. This is so as the dispatch, training, response, assessment and treatments are biased toward the cohort of patients in cardiac arrest or 'peri-arrest' requiring resuscitation. The present and historical approach is to assess and mitigate (particularly environmental) risk, determine the life threatening insult (EC need) and provide time-sensitive interventions to reduce mortality and morbidity risk. Yet EC providers themselves are subjects of risk - in the form of public and DV, hazardous materials, infectious diseases and blood-borne pathogens, to name a few. This imposes and creates personal and professional needs and responses - such as: to be free from such hazards, to have access to professional guidance, expert training and personal protective equipment.

This theoretical abstraction shares foundational principles with The Risk-Need-Responsivity (RNR) Model of offender rehabilitation that emerged out of Canada in the 1980's (Ward & Maruna, 2007). Whereas in this criminal-justice model (Bonta & Andrews, 2007, p. 9) the 'Risk principle' is to "match the level of service to the offender's risk to re-offend"; the 'Need principle' is: "Assess criminogenic needs and target them in treatment" and the "Responsivity principle: Maximize the offender's ability to learn from a rehabilitative intervention"; the 'RNR' terms were re-contextualised toward a practice-model of EC response to DV (Table 19).

Whilst EC processes partially address the above, this study documents that the discipline has no deliberate and nuanced approach to cases of GBV. The generic approach is counter-productive to identifying and treating GBV cases due to the behavioural pathology of DV and the social constructions of violence and concealment by the perpetrator, victim and prehospital practitioner.

Table 19: Connotative and Denotative Meanings of Risk-Need-Responsivity

	Connotative Meaning (Implied)	Denotative Meaning (Operational)
Risk	A situation involving patient and/or EC provider exposure to danger, harm or loss in a DV context; organisational and/or regulatory risk factors may enhance or reduce risk experienced at the patient-provider interface.	Conduct a scene survey for violence and child neglect. Ask routinely about past and current exposure to abuse and conduct a health and safety risk assessment.
Need	An EC necessity or obligation, without which physical and/or psychological suffering, harm, or loss might ensue; includes safety needs and protection of rights.	Needs are identified as emergency, urgent or on-urgent and resources or referrals are intended to address a particular health or social need.
Responsivity	The precision and scope of the EC practitioner or EMS response to the case and phenomena of DV. It includes maximising reactiveness and pro-activeness and is judged by the extent to which it satisfies, prevents or addresses the Need. This implies a GBV sensitive ideology that finds expression in EC research, policy and practice.	Implement the DV screening protocol. Nurture appropriate referral pathways. Improve DV screening sensitivity and competence amongst the EMS workforce. Improve the EMS surveillance of GBV and build in early warning triggers for action. Protect forensic evidence at crime scenes Foster empirical, theoretical, policy and practice research on GBV and EMS.

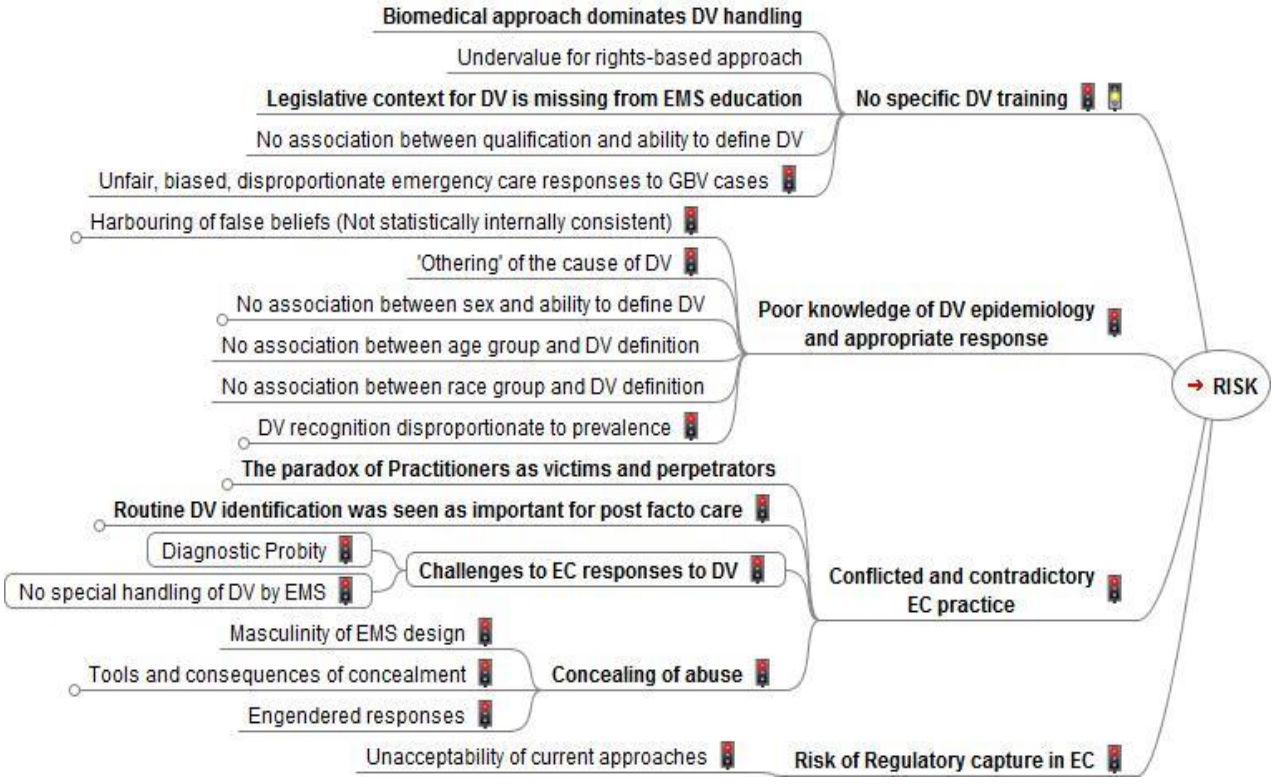
Conceptualising connotative (theoretical) and denotative (operational) meanings may assist in not undermining the DV response in everyday EC practice. The generality of the words risk, need and responsivity should not take away from the originality of its contribution to EC. The terms therefore, may not be directly applied from the original RNR conception (Bonta & Andrews, 2007) as they, in the criminology context, apply to offender rehabilitation. By considering their implications for EC their simplistic appeal as ‘categories’ of analysis emerges. Connotation and denotation are two principal methods of describing the meanings of words. Connotation refers to the wide array of positive and negative associations that most words naturally carry with them. Connotation represents the various social overtones, cultural implications, or emotional meanings associated with a meaning. Denotation represents the explicit or referential meaning as derived from the data that was mind-mapped in Figures 36-38). Denotation also refers to the literal meaning of a word, the so called 'dictionary definition.'

In Figures 24-29 similar themes/codes were regrouped into categories of Risk (represented by the red traffic light image that is a feature of FreeMind® software), Need (represented by the yellow/amber traffic light image) or responsivity (represented by the green traffic light image).

6.5.1 Patterns of Risk

Patterns of risk, defined as exposure to harm, emerged (as can be seen in Figure 36) with methodological triangulation and further abstraction. The codes from multiple methods resulted in the emergence of these patterns. Contemplation of 'Risk' as a pattern only occurred when Phase 1 was completed.

Figure 36: Denotative Patterns of Risk



Key: The Red traffic light indicates real or perceived 'Risk'.

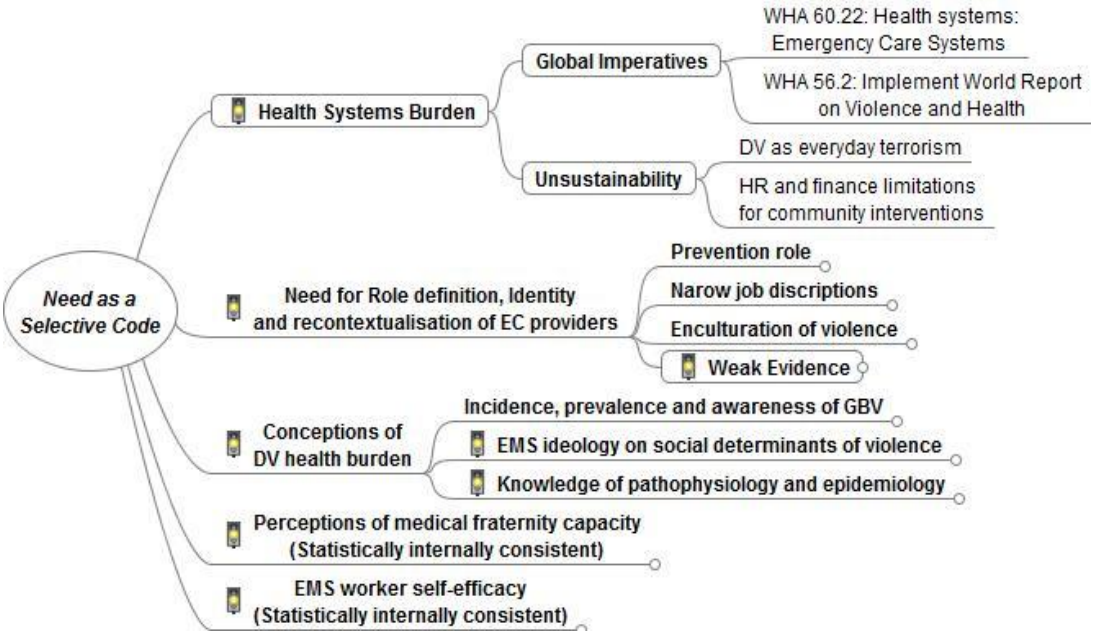
During the training in Phase 2, the elements of risk in Figure 36 were verified by participants. The risk extends to the EC profession, women and gender/health rights.

Participants reported the absence of DV specific training as an explanatory risk before valuing training as a need. This was compounded by the absence of a legislative context from the EC education and a biomedical bias. Poor knowledge of DV and appropriate responses was an obvious consequence. Together, these deficiencies collude toward conflicted and contradictory EC practice where practitioners deliberately conceal the occurrence of abuse, lack the diagnostic acumen needed and paradoxically position themselves as victims and even as perpetrators whilst supporting routine DV identification. The risk of regulatory capture, for ideological or administrative reasons is defined as an undermining of the public interest in the perceived or real favour of the professional interest. All of these present simultaneous risk to patient safety and professional integrity.

6.5.2 Patterns of Need

Figure 37 denotes 'Need' by partially expressing criterion-referencing for Need as experienced by this sample. 'DV Need' has propositional value as these needs may burden the health system. Despite the financial and other costs from EMS systems, current approaches of non- or insufficient responses are not sustainable and morally reprehensible. Conceptions of DV health burden were divergent. The incidence, prevalence, awareness of behavioural pathology, and ideology on social determinants of violence were significant deficiencies and serve as critical needs to be satisfied as they predicate interventions. There is a need to enhance the EMS capacity to care for DV victims by improving practitioner self-efficacy. The overwhelming need was for professional scope and role re-definition from narrow conceptions of emergency response toward a public health agenda. The need is to shape the EC professional identity within the health system through re-contextualising public health and forensic medicine principles in EC. In considering the denotations of need in Figure 37, it is apparent that the concept of DV need is relative to how it burdens the health system in terms of direct and indirect health costs; how DV is conceptualised and the capacity for the individual EC provider or the EMS to cope with DV.

Figure 37: Denotative Patterns of Need



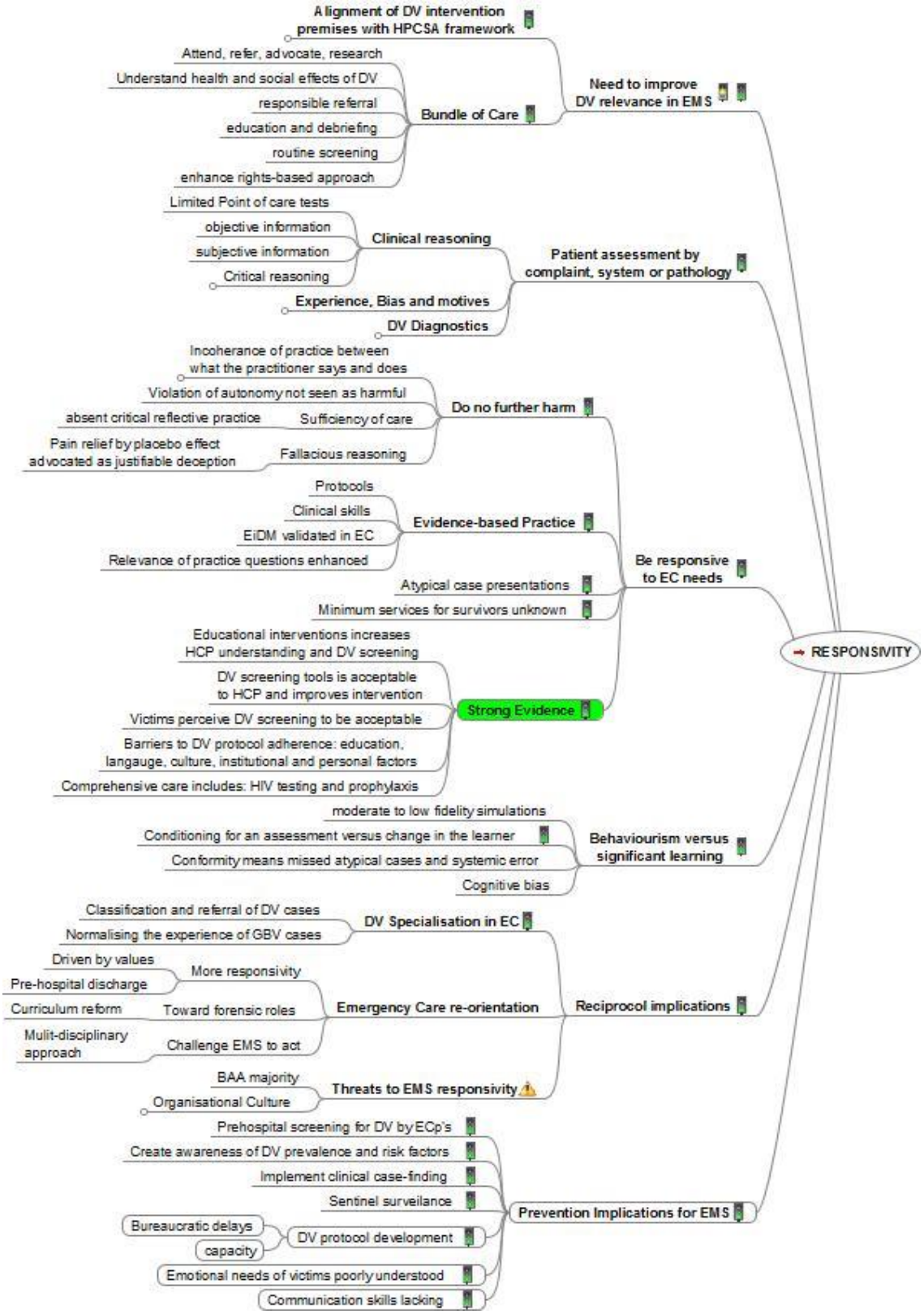
Key: The Yellow traffic light indicates real or perceived 'Need'

6.5.1 Patterns of Responsivity

Perhaps the starting point to enhance responsivity is to improve the DV relevance in EC. The overt approach is to provide a DV bundle of (prehospital) care that is aligned to the HPCSA regulatory framework. Patient assessment should be driven by diagnostic rigour and clinical reasoning, not irrational practice bias and fear. Addressing (and redressing) EC needs implies ethical and evidence-based practice through a minimum standard of care that includes prehospital screening, sentinel surveillance and responsible referral. To enable this, the system of EC education must be responsive by acknowledging the limitations of behaviourist ideology and consider the prospects of significant learning, where learning is measured in terms of change experienced.

(Key for the Figure 38 [next page]: The Green traffic light icon indicates 'Responsivity'.)

Figure 38: Denotative Patterns of Responsivity



Reciprocal implications include prevention opportunities, such as can be seen in Figure 38 above: DV and forensic specialisation, EC orientation toward 'upstream interventions' and addressing threats to responsivity such as organisational culture and human resource limitations.

The framework for levels of DV prevention (Table 20) is fundamental to epidemiology (Joubert, et al., 2010) and health psychology (Schwarzer & Gutiérrez-Doña, 2000). Currently, EC functions at the treatment aspect of tertiary prevention. The opportunity is to expand the EC role to include early diagnosis and prompt treatment (secondary prevention). Primary prevention should be included to facilitate health education, to contextualise DV as a social determinant of health (SDH) and to consider environmental controls.

Table 20: Framework for Levels of DV Prevention[112]

(Adapted from Joubert, Ehrlich, Katzenellenbogen, & Abdool Karim, 2010, p.19)

NO DV		ONSET of DV	OUTCOME of DV
Healthy state →		Preclinical → Clinical →	Recovery, Serial abuse, Disability, Death
PRIMORDIAL PREVENTION	**PRIMARY PREVENTION**	**SECONDARY PREVENTION**	**TERTIARY PREVENTION**
Health Promotion • Prevent high risk factors • Target low risk groups	**Health Promotion:** • Health Education, • SDH	**Early Diagnosis:** • Screening • Case-finding	**Treatment** • Prevention or limitation of disability
	Specific Protection: • environmental controls	**Prompt Treatment** • Arrest DV process	**Rehabilitation:** • Retrain remaining capacities maximally • Retrain maximal independence including employment

⇦ = proposed leftward shift; SDH = Social Determinants of Health

[112] The notion of 'upstream', society-based interventions and injury prevention is supported by Western Cape Government, 2011. 2020: The future of health care in the Western Cape: Strategic Framework. WCG: Health, Cape Town.

This ideological and practice shift left (as indicated by the red arrow in Table 20), concentrates EC efforts from DV outcomes to the onset of DV (with clinical/pre-clinical signs and complications). The goal of DV interventions are to return to a healthy state with no more DV exposure (hence the red arrow in the direction of a healthy state, counter-current to the onset of DV). The framework suggests that for an epidemiological transition to occur, all prevention opportunities are to be exploited. This study documents the efficacy of EMS in the early diagnosis of DV through a screening intervention. The sustainability of the endeavour through prompt and effective treatment is the future challenge. There-in lies the value proposition of EC in relation to DV-burden reduction and responsiveness: to enable the latent health promotion, public health and forensic medicine potential of EC.

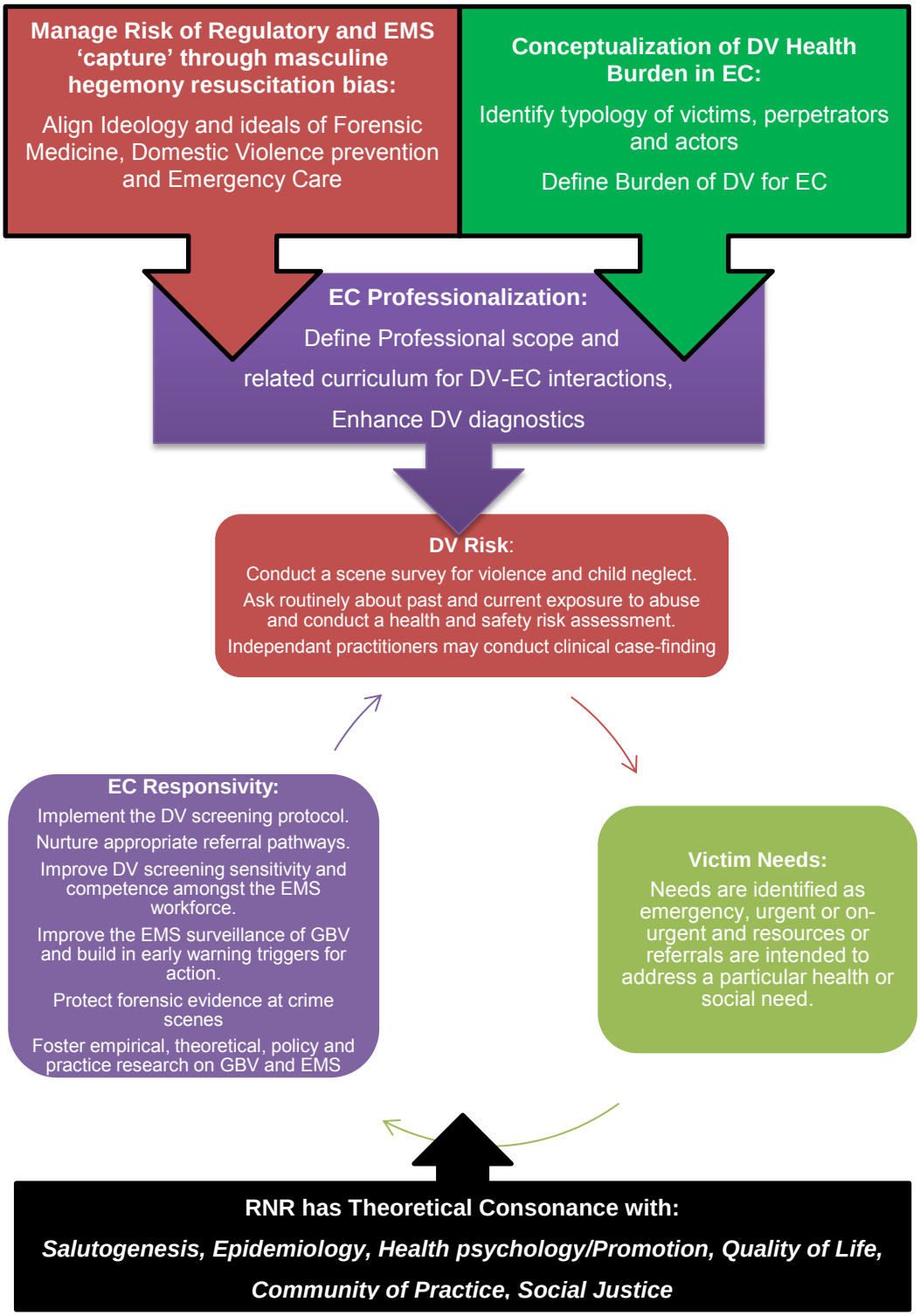
6.6 Theoretical Framework for Reciprocal Implications of DV and EC

An output of this study was to generalise toward a theory. The Risk-Need-Responsivity (RNR) Model[113] is introduced as a descriptive/conceptual model to promote good EC praxis. No doubt, the considerable work that lies ahead in its implementation is a matter for future monitoring and evaluation. The risk of regulatory/EMS capture (in relation to DV responsivity) is contingent on how DV is conceptualised in the health burden of EC. How this risk is managed will determine the pace of professionalism in DV responses and EC professionalization in general. This professional approach will enable a DV-specific risk assessment, prioritisation of bio-psycho-socio need and appropriate individual and system responses. The implementation success will be mitigated by: a) Professional scope for and ideology of Forensic Medicine, DV and EC; b) typology of victims, perpetrators and actors as well as c) DV/EC reciprocal practice implications.

Whilst ideological risk is at the level of the regulator and EMS management,' DV risk' is refers to the meaning of risk at the level of the patient and practitioner (hence the symbolic colour red). The colour purple links EC professionalization with its responsivity meaning. The colour green indicates the conceptualisation of the DV health burden and correlates with how victim needs are perceived. Table 19 defines the meaning of the RNR principles.

[113] © Naidoo, 2017: The Emergency Care Risk-Need-Responsivity (RNR) practice-model©: A conceptual frame-work to strengthen the role and scope of EC in GBV prevention.

Figure 39: The Risk-Need-Responsivity (RNR) practice-model©: A Conceptual framework to strengthen the role and scope of EC in GBV prevention:



The RNR model is practice-oriented and shares outcome principles of quality of life, health psychology/promotion, community of practice and salutogenesis (the creation of wellness) (Antonovsky, 1996; Eriksson & Lindstrom, 2014; Naidoo & Nadvi, 2013). In this way, the EC provider and the EMS contribute to the salutogenic 'General Resistance Resources' of DV victims[114]. The historical and current reality of EC contribution to health promotion has been in tertiary prevention. Now the 'Risk' assessment allows entry to primary and secondary prevention (Table 20). There-in lays the change toward social justice (Sen, 2010) intended in part by this study. Hence, the RNR model has strong foundational support and theoretical coherence for stability.

One of the specific objectives of this study was to develop an original theoretical analysis (Figure 39) that will explicate what can happen in the EC field as an emergent health profession to effect positive change in its professional response to GBV. How we conceptualise of the DV health burden in EC will influence the risk of regulatory capture and impact professionalism in DV responses and EC Professionalization. Professional scope for and ideology of Forensic Medicine, DV and EC; the typology of victims and actors and DV/EC reciprocal practice implications will inform such a conceptualisation. The RNR model will be quality managed by the professionalization of EC and professionalism in DV responses.

[114] Also an output of this scholarly endeavour, ruminations about the theoretical fit of salutogenesis as a gender-neutral theory of wellness (not pathogenesis) is captured in the feminist journal: Agenda; Empowering women for gender equity (Naidoo & Nadvi, Risk factor management and perpetrator rehabilitation in cases of gender-based violence in South Africa: Implications of salutogenesis, 2013).

6.7 Evaluation of Qualitative Methods

This study assumed an exploratory, sequential, mixed methods approach design. It is important, for reflective practice, that one evaluates the study methods. I[115] draw on Northcote's five guiding principles[116] of qualitative evaluation (Northcote, 2012) to frame this response that gauges trustworthiness. Denzin (2009) makes explicit that standards for assessing quality are forms of interpretive practice that enact a politics of evidence and truth. Northcote (2012) cautions that criteria must fit the methodology and that applying quantitative criteria[117] to qualitative research would be a misfit:

Was the qualitative approach contributory in advancing wider knowledge or understanding about policy, practice, theory in EC? The knowledge generated did challenge the existing educational beliefs of academics and students, having raised arguments about EC role and complicity in DV cases. Participants in the FGDs had the opportunity to engage in reflection about their DV-EC related experience and either defended the status quo or challenged the current EC premise. This is less so for the non-participant observation, given the non-participation. The researcher was aware of the risk of therapeutic misconception here. Apart from declaring an undefined practice gap for EC responses to DV, the findings are not any more significant. It did allow for a dialectic application of theory, policy and (less so) practice considerations to prehospital DV responses.

The qualitative findings are transferable, to provinces within the country due to the national regulation of training and practice. Botswana, Namibia and Swaziland have imported the RSA system and may also be destinations for transferability, although with caution as the cultural, legal and policy landscape differs. It is uncertain what value it may yield for other

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[115] I use this first person singular pronoun as it would be inauthentic not to.

[116] The guiding principles are underlined.

[117] Only qualitative methods are discussed here. The objectivity, reliability and validity of quantitative methods are implied throughout the methodology and analysis of Phase II; by the many Monte Carlo simulations that confirm acceptable power and precision in the survey, retrospective and prospective cohorts. The question was developed using the PICO method. Training followed a strict adherence to curriculum outcomes and the protocol implementation was of a standardised, HPCSA-approved screening guideline. All ethics commitments were honoured, with no reports of any adverse events.

emerging health professions, due to the many nuances of prehospital EC. The qualitative results are only claimed to be generalizable in terms of theoretical propositions, and not to a population, due to the small un-randomised purposive and predetermined sample. Also, direct clinical data was admittedly lacking, but was later generated in Phase II.

There is a future focus/direction created that places DV on the EC clinical and research agenda. There is also ontological and educative authenticity (Guba & Lincoln, 1994) as evidenced by a publication on paradigms and development of a DV curriculum respectively. There is a claim to be made for reciprocity as the profession, and therefore the participants, benefit from policy recommendations, DV curricula and dissemination of results. Also worthy is the theoretical reciprocity at the level of the DV-EC intersection. Notwithstanding the many limitations, the topic and research is worthy from the point of view of a naïve EC as a cost-driver to the health-economy and DV as a prevalent societal burden.

Is there rigorous conduct thorough the systematic and transparent collection, analysis and interpretation of qualitative data? Through the verbatim transcripts (from voice recordings) and convoluted mind-maps there is openness and transparency. Each method is reported on individually and then triangulated, but the many data collection sources did obfuscate the initial iterations of the report. Due to the need for clarity, the annexures abound with ancillary material that highlights the resonance within and between methods. I took the multiple data sources literally in an attempt to seek multiple voices. Indeed, I found fairness in the multiple approaches to be challenging.

Ordinarily, prolonged engagement with the data collection is preferred. I perceived data saturation at the points that I did (probably due to my insider status) but in the analysis few thick analyses emerged. It is worth being reminded that the EC discourse is rather shallow/thin to begin with. There are no EC PhD graduates, much procedural knowledge about a few topics, short-course trained staff, mal-aligned expectations of the EC mandate and of course a neophyte researcher.

Initially, grounded theory was considered. For the reasons above, this was abandoned in lieu of qualitative description. This approach fitted seamlessly and rendered seemingly

overstated comment as more palatable. Primary and secondary analyses are presented as axial and selective codes, respectively. The mind-maps show descriptive and interpretive validity as all codes can be accounted for. The process is credible in that all undertakings claimed in the ethics application was fulfilled. The matter that may be perceived to undermine the analysis is the small *ad hoc* (not randomised), but purposive sample. This is less of a concern with the qualitative data (as the intention is *not* to generalise to a population), than with the survey[118]. The researcher was responsible for facilitating all data collection, transcribing, coding, and analysis. Study limitations are addressed throughout, with Phase II lending much rigour.

Another guiding principle of qualitative evaluation is whether the study is defensible in design by providing a research strategy that can address the evaluative questions posed. This study sought to explore the role and scope of EC in DV responses. Appropriateness of the Phase I methods have to do with the qualitative approach suitability for the question. This study scope involved: the clinical best practice by EC providers in response to domestic violence in South Africa, EC educators and providers ideological and clinical location relative to the health sector response to GBV/DV pathology and reciprocal implications of explanations of DV have for EC educational theory and clinical practice. After Phase I it was found that the qualitative methods used were not sufficient to provide answers on clinical praxis. The use of simulated practice observation was used as a proxy indicator for clinical praxis[119]. This raised many concerns because although the context was

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[118] The original survey of 141, un-randomised, purposively sampled respondents suffices as a pilot study. The survey of 345, self-selected clinicians from randomly selected bases in the final survey redresses the limitations of the pilot survey.

[119] The simulation observational analysis serves to corroborate other qualitative data that EC practice is indeed resuscitation oriented. Its removal would weaken the authenticity of some qualitative claims of practitioner 'positionality' in relation to DV prevention and it is therefore retained. The 75 (n) participants who implemented the screening tool was determined post facto and so their identification for simulated practice could not be ascertained at the time of training. Similarly, the application of medium to high fidelity simulations in the training was not considered as it requires participants to be in small groups, over longer periods of training and to render themselves vulnerable before others. This raises ethical concern, given any personal experience of DV that participants might have. Such simulation training would involve participant observation and was logistically not possible given the constraint of time and risk of participant attrition inherent in the cohort design. Instead, the training involved videos and low fidelity simulations/demonstrations of the

that in the absence of community practice or internship, simulations were relied upon to determine clinical competency; it did not provide definitive answers on clinical best practice in the working world of EC, where DV cases present.

Phase I, however, did provide some insights on ideology, barriers/enablers of care, DV policy and theory. It sought to understand the subjective experiences of the EC community. It illuminated what was happening and why observed DV situations/outcomes or EC discourses occur. One could say, through within method and between method triangulation, these methods were confirmed as appropriate for insights into the lived experience of DV cases by the EMS. However, they were not dependable to pronounce on what clinical endeavours would work in the South African setting and how? It did suggest the need to improve detection and that EC had a practice gap with regard to DV. Phase II was then conceptualised (Table 1 displays the alignment of the aim, questions, objectives/outcomes and methods). The Qualitative aspect was intended to be equal to the quantitative component. In retrospect, there is likely to be greater rigour and emphasis in the quantitative component, although it was Phase I that led to the Phase II question.

Are findings credible in claim through plausible argument about significance of findings? Whilst member checking was not done, peer confirmability was employed. Managers were interviewed to verify some elements in the focus groups. A colleague with a background in law and EC who did not participate in the study was a regular sounding board and validated the legitimacy of claims. Although all attempts at coherence was made, there will likely be areas where my insider status takes certain concepts for granted and underplays its relative importance. Where consensus or dissonance was reached, this is indicated. Theoretical, descriptive or interpretive validity is claimed as having emerged from the data or from the literature review. I have used reflexivity to manage inherent researcher biases.

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researcher portraying certain behaviours such as denial, disempowering behaviour, and asking about abuse.

The simulation discourse in Emergency Medicine has gained much traction globally as it provides an efficient and ethical modality to prepare students and graduates for particular typical and atypical emergency care presentations. The role of simulation in future DV training certainly deserves interrogation in future research.

The analysis is affective in nature by acknowledging the excitement of research discoveries, emotional involvement of participants and enthusiasm of the researcher. This is attempted in the writing style and presentation of some graphics. Arguments may even be affective in nature. The sincerity of the effort and the sacredness of the material can be gleaned from the annexures and deep commitment to the topic (See the many contributions made in Table 21). I have had to contain myself on occasion in an attempt to manage the inherent biases with which I write and which I am aware of. The cohort study provides the critical distance needed to enhance objectivity. Critical theory provides the lens that enables me to use 'heavy' criticism where deserved.

7 CHAPTER SEVEN: RECOMMENDATIONS AND CONCLUSION

This chapter concludes the thesis with the study aim and related success. Recommendations for future research, a dissemination strategy and recommendations in relation to the study questions follow. It briefly reviews the major steps taken and identifies lessons learnt in the process. Key results are revisited for the *affect* on researcher views and GBV relevance to EMS nationally and the EC profession at large.

Recommendations are presented below in relation to the research questions. They include the national implementation of screening policy; mitigation of regulatory capture risk and professionalising responses through curriculum-reform. The proposed Risk-Need-Responsivity practice-model promotes clinical coherence in Emergency Care. This elevation of the emergency care discourse is likely to benefit the victim and emergency medicine community. These recommendations will be disseminated at meetings of the HPCSA, Professional Board for Emergency Care: Clinical Advisory Committee, Education Committee and the Committee on Preliminary Enquiry. The National Department of Health: EMS Directorate hosts the National Committee of EMS and the National EC Education and Training Committee that may be instrumental in gaining access to all provincial EMS employees nationwide. The DV curriculum, DV-screening and Child abuse reporting guidelines as well as the Risk-Need-Responsivity (RNR) model could be implemented nationally. Of course the EMS surveillance, using the DV detection and reporting instruments of this study, will have to be improved to enable EMS responsiveness (particularly for patient safety) and to monitor and evaluate any practice change and related health system benefits/costs.

7.1 Recommendations

7.1.1 What is the Clinical Best Practice by EC Providers in Response to DV in RSA?

The clinical best practice emerged from a critical review of the literature and was validated by the ‘actors’ concerned in the primary data collection. In determining what is possible and likely to work, the screening tool was implemented and yielded interesting findings. DV is a health systems burden and deserves a response to GBV of global proportions, with historical limitations on human and financial resources for community interventions.

Prevention implications for EMS was a pattern that encompassed routine, universal prehospital screening for DV by EC providers, creating awareness of DV prevalence, implementing clinical case-finding and sentinel surveillance. An EBM approach to DV responses by EC was equally patterned. 'Strong evidence for screening' was that it improved interventions, understanding and acceptability thereof. Barriers to screening were well evidenced. The intervention, therefore, may promote itself. 'Weaker literature evidence for DV responses' included educational interventions as promoting of understanding, support for routine and universal screening, the need for research on intervention outcomes and the clinical and epidemiological imperative of DV awareness. When implemented, the DV screening training and policy yielded a worst case DV detection rate that was at least 3 times the historical rate and a best case scenario (at minimum) of 9 times the historical detection rate.

The salient features of the screening protocol (Annexure 1) emanating from this study are that it identifies who should be screened for DV (females aged over 14; all men suspected of being victims; and children with signs of neglect or abuse). Further, it stipulates that only practitioners who have been educated about the dynamics of DV, the safety and autonomy of abused patients and cultural competency should undertake screening. It requires that screening for abuse that has occurred over the past year should be conducted at every trauma call, and that non-trauma patients should be screened for any DV that has occurred at any time in their lives. In other words, it proposes that DV screening should be a standard part of a health assessment by a practitioner. Where patients disclose DV as part of routine screening, the patient in question must be assessed soonest and the findings documented. Safety assessments must be conducted for all patients who disclose DV and referral[120] to the South African Police Services (with patient guidance) may be prudent in cases where the patient feels unsafe. The following recommendations are consonant with the Lancet series recommendations on 'Violence against women and girls' (Garcia-Moreno, et al., 2014).

[120] There is not enough evidence to support mandatory reporting to the police. Improving the relationship with the police was however well supported.

A. ***Recommendation: Amend and Implement the DV screening policy to Professional and Geographic Scale.***

The EMS role is about facilitating access to health care and by minimising patient risk, provides patient safety. The historical understanding of providing for safety is to mobilise police intervention. The role of the South African Police Service (SAPS) is to promote justice, protect victims of crime and arrest perpetrators of crime. When SAPS despatches a police vehicle to an overt case of DV it does not routinely inform the EMS, *vice versa*. EMS should not routinely summon the SAPS, but it does need to develop mutually agreeable criteria that both could be more responsive to.

Communications centre protocols must support the operational protocols. Considering that EMS communications centre infrastructure exists in all provinces, it would be cost-efficient to field DV related calls and implement crisis intervention (telephonically and by ambulance dispatch). The centre becomes a pivotal place to monitor the screening policy compliance, with scalability. Annexure 11 offers the minimum DV-sensitive data collection parameters needed for DV surveillance in EC. The triage system implemented must elevate the importance of DV cases, so that such cases are prioritised appropriately.

The DV screening implications for other professional Boards at the HPCSA should be determined by the HPCSA. To be consistent with the Criminal Law (Sexual Offences and Related Matters) Amendment Act 32 of 2007, the age to start routine screening should be 12, not 14 years of age, as indicated in the DV screening guidelines (Annexure 1). In children below the age of 12 years clinical case-finding should be the standard diagnostic approach by those in independent practice.

7.1.2 Where do EC Educators and Providers Ideologically and Clinically Locate Themselves Relative to the Health Sector Response to GBV?

This was largely concerned with appraising the current responses and responsiveness by the emergency medical system to GBV. The relationship between the practitioner understandings of EMS roles and their subjective experiences of GBV were explored.

EC challenges and threats to DV responses require organisational and ideological change for the DV role and professional scope to be realised. The paradoxical EC practice relative

to the behavioural pathology of DV must be addressed as it is counterproductive to the responsivity goal. This includes ambivalent attitudes, contradictory positions, learnt helplessness, false beliefs, disempowering health providing behaviour such as disbelieving, minimising accounts of abuse or violating confidentiality and trust. The DV-specific role of the EC discipline is first in need of a broader role definition. The EC identity and GBV must be re-contextualised for EC roles to be effective in DV prevention and management. There is currently no research, practice or pedagogic agenda that progressively and critically charts the way for EC to be a true profession and a salutogenic resource[121] that persistently reduces DV risk and femicide, facilitates a sense of coherence within victims and contributes to wellbeing, quality of life[122] and health.

Essentially, current EC ideation is to 'rescue'. The EC community values professional registration, but is a long way from claiming full professional identity. In some areas of growth like the DV guideline development, an emerging profession can be seen. General training and responses included patterns of risk assessment, diagnosis and need assessment followed by emergency interventions. However, there was no precision and sensitivity for DV cases. Responses, therefore, are not health promotion, forensic or primary health care oriented. The strongest influence for the rescue demeanour is historical naivety, pace of regulatory reform and the conflation of the terms 'EC' and 'resuscitation' as synonymous. Clinically, it is the behavioural pathology of DV (Riviello, 2010) and the epidemiological risk (to the victim) that is undermined. Self-preservation (of the rescuer) as a hallmark of the rescue demeanour contributes to ambivalent attitudes and contradictory positions in DV responses.

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[121] Lindström, B. 2010. Salutogenesis – an introduction. http://www.centrelearoback.org/assets/PDF/04_activites/clr-GCPB121122-Lindstom_pub_introsalutogenesis.pdf; Lindström, B; Eriksson, M. The Hitchhiker´s Guide to Salutogenesis, Folkhälsan Health Promotion Research Report 2010:2 (www.salutogenesis.fi)

[122] The sense of coherence is construed as the product of having grown up in a particular social structure, culture and historical period, as well as of idiosyncratic events in the individual's own life (Antonovsky, 1996:15). These sense of coherence dimensions constitute the origins of health and foster resilience, coping, satisfaction and autonomy dimensions that are consistent with the WHO definition of 'Quality of Life' (QoL) and positive mental health (Kovess-Masfety, Murray and Gureje, 2005).

B. ***Recommendation: Amend the HPCSA Conflict of Interest Policy to Address 'Ideological Bias' as a Risk Factor for Regulatory Capture.***

Section 6(1)(k) of the Health Professions Act 56 of 1974 refers to conflict of interest, but does not address it adequately in terms of corporate governance or patriarchal influences. The Conflict of Interest policy of the HPCSA could be enhanced by the following addition[123] to broaden the understanding of conflict of interest to include ideological bias:

> *Definition of Conflict of Interest:* The Council and Professional Boards must be cognisant of the potential for conflict of interest that may occur as a result of collective ideological bias which is inconsistent with the values and legislative mandate of the HPCSA. Such ideological bias may become so dominant or pervasive in a regulatory structure that it may give rise to ideological regulatory capture. Such regulatory capture impedes the ability of the regulatory structure to engage in meaningful critical reasoning in the public interest. Regulation is the government's mechanism to protect the public. Regulatory capture is "the tendency of regulators to identify more with those they regulate than with the public they are protecting" (Lahey, 2011). The regulator is accountable to the public and to members of the profession and therefore endures a particular vulnerability to regulatory capture. Regulatory capture has the detrimental effect of not placing the public interest first and of eroding the government's and public trust and confidence in the regulator to protect the public interest.
>
> *Applicable Principles and Procedures (Section 5):* Council or Board members should also be aware of their own ideological biases which may affect the objectivity of their contribution to Council or Board deliberations and decisions by harbouring preconceived ideas or promoting fallacious reasoning. Council and Board members should be explicit in stating their ideological biases upfront so that conflicts of interest of an ideological nature can be recognised and appropriately managed. As a collective, Council and Boards should be alert to the possibility of insidious influence of dominant or pervasive ideologies within their membership and should actively promote engagement which exposes and challenges such ideologies in the public interest.

[123] This study recommendation was accepted by the HPCSA, PBEC and was submitted to the Council for consideration. An extension of this argument was also submitted by the HPCSA to the National Department of Health in response to comment on proposed regulations regarding representation on the PBEC.

C. ***Recommendation: Implement Evidence-based Practice in EC Response to DV***

In the absence of definitive evidence, alternate forms of evidence, such as theoretical and contextual evidence may suffice. Evidence-based approaches serve to mitigate the undue influence of practitioner and EMS bias. The paucity of direct content and guidelines for clinical care must be remedied. The EMS Worker Self-Efficacy Scale and the Perceptions of Medical Capacity Scale, designed in the questionnaire, are validated as internally consistent and should be used to evaluate practitioners upon receiving DV intervention training.

To provide robust and more convincing before-after studies[124], researchers in EC must attempt to provide a control group that compares with the intervention group; else it is difficult or impossible to attribute causation. To avoid selection bias, there should be no opportunity to select in or out of the intervention group. To infer sustainability, the study should continue for a long enough period.

7.1.3 What Reciprocal Implications do Explanations of GBV Have for EC Educational Theory and Clinical Practice?

Having considered the emergency medical practice ideal in responding to a GBV case, and the current emergency medical system design and function, this study sought to understand their current and future impact on each other. The call is to move from narrow EC ideology toward conceptions of prehospital forensic, emergency, preventative and promotion of health care. Explanations of GBV may provide practice coherence and contribute to societal well-being.

Table 21 captures some of this study's policy influence and original knowledge contributions.

[124] Cochrane and the Emergency Medicine Journal (EMJ) discourage uncontrolled before-after studies (Goodacre, 2015).

D. ***Recommendation: Critical Theory is an Enabling Lens and Qualitative Descriptive Research is an Acceptable Methodological Approach to Understand GBV Prevention by EC***

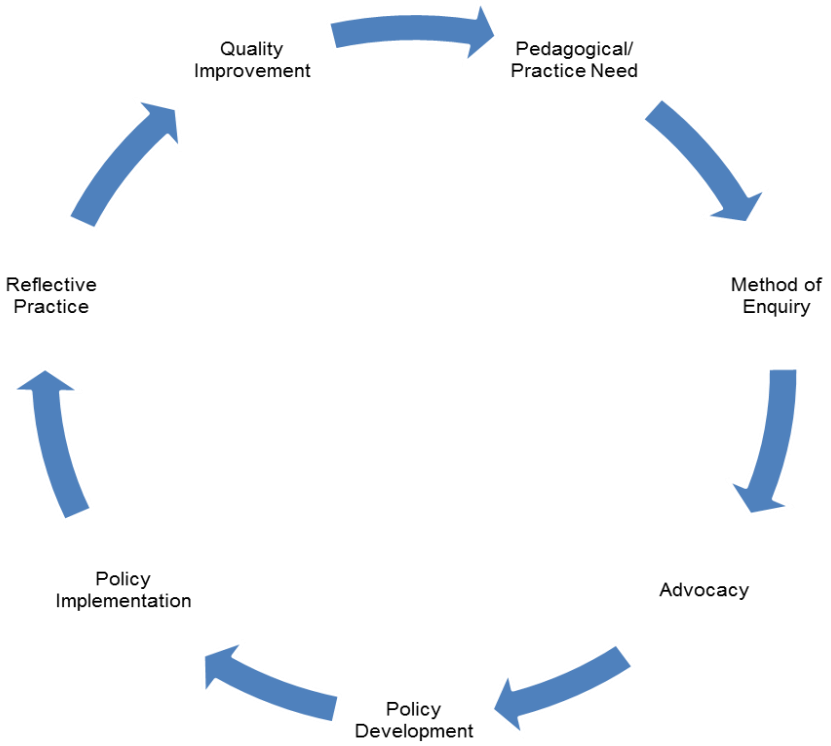
The biomedical approach of EC education and practice is founded on the positivist paradigm. This study makes a case for critical theory perspectives as transformative toward gender justice. The Stanford Encyclopaedia of Philosophy posits that [notwithstanding a constitutional democracy], linguistic-symbolic meanings and symbolic capital may be used to "encode, produce and reproduce relations of power and domination" (Bohman, 2005). Rather than only providing a set of explicit principles of justification and institutional decision rules (such as EC protocols and guidelines), *democracy* is also a structure of free and open communication.

> Ideology restricts or limits such processes of communication and undermines the conditions of success within them. Ideology as distorted communication affects both the social conditions in which democratic discussion takes place and the processes of communication that go on within them. The theory of ideology, therefore, analyses the ways in which linguistic-symbolic meanings are used to encode, produce, and reproduce relations of power and domination, even within institutional spheres of communication and interaction governed by norms that make democratic ideals explicit in normative procedures and constraints… (Bohman, 2005).

The HPCSA PBEC commands a large voice and can implement curricula changes, exit level outcomes, skill sets, screening protocols, quality standards and ethical rules. It can engage with employers, other professional Boards, the DOH and the Department of Education, and foster a community of EC and forensic practice in DV intervention by EC providers through continuous clinical improvement (Figure 40). This involves identifying a paedagogic or practice need, applying suitable modes of enquiry, applying principles of advocacy in disseminating the results, translating findings to policy, implementing such policy, reflecting on its implementation and ensuring continuous quality improvement. This is to ensure:

> To ensure that our responses to the brutal and demeaning legacy of sexual and other gender violence are not deployed in reproducing the very brutalities they seek to challenge, we need to unpack and interrogate carefully the things we say and do (Shefer, 2013).

Figure 40: A heuristic of Continuous Clinical Improvement for GBV management in EC



E. ***Recommendation: The Gap between Educational/Regulatory Policy and DV-related Clinical Practice Needs Bridging***

Improve educational/regulatory policy and clinical practice through the regular generation of evidence-informed recommendations on GBV prevention by EC providers in the prehospital field.

Table 21 documents this study's contributions to date.

The DV screening (Annexure 1) and the Child Abuse reporting clinical guideline (Annexure 27) are recommended for implementation as they may serve to narrow the theory-practice gap.

Table 21: Contributions to the Forensic and EC discipline

Study's output	Contribution to the Forensic and EC discipline
a) DV Responsivity Questionnaire by EC providers (Annexure 2)	The EC profession now has a tool by which it may measure EC responsivity to DV. The implementation of the tool in this study provides a baseline against which any future intervention may be evaluated. In particular, the questionnaire analysis validates the EMS Worker Self-Efficacy Scale and the Perceptions of Medical Capacity Scale as internally consistent.
b) DV screening guidelines (Annexure 1)	This guideline, a direct output of this endeavour, has been accepted by the HPCSA for national implementation in RSA. Over 70,000 EC providers are now professionally obliged to respond to DV in terms of diagnostic imperatives, risk assessment, EC treatment and appropriate referral. Consequently, all other professional boards are now also contemplating what meaning DV has for their profession as this matter was tabled at the PBEC Inter-board Forum and Ethics Committee of Council. In so doing, it promotes the DV discourse at the level of the national regulator. The guideline, in its infancy, influences documentation practices, the chain of evidence and EC diagnostics. It was disseminated in the HPCSA mouthpiece: The Bulletin (Vinassa, 2013) to all health care professionals registered with the Council.
c) Social Determinants of Health Position Statement (Annexure 25)	The social determinants of violence were perceived as being far removed from practice. Globalising the violence discourse provides context and impetus. GBV is now acknowledged as a social determinant of health by the PBEC, there-by strengthening the DV policy landscape in EC.
d) Submission on Draft HPCSA Conflict of Interest Policy	The risk of regulatory capture and dominant ideology (and poor public participation) at the level of regulation was submitted to the PBEC (Recommendation B).
e) Submission on EMS Regulations: Risk of Regulatory Capture	An extension of the above argument was requested by the PBEC in response to comments to draft regulations on PBEC representation.
f) Application of the 'Conceptual Compass' and PBEC Research Committee terms of reference	This study brought to light the research gaps and needs for GBV responses. In pursuance of explanations of EC research bias, the application of the 'conceptual compass' for EC research was supported (Figure 41). This novel conceptual tool to locate EC research, was accepted by the PBEC Research Committee in the development of its inaugural terms of reference.
g) Reproductive Health Guidelines critique	Critique was offered to the PBEC that the GBV aspect of the reproductive health guidelines was necessary but that GBV is not only a reproductive health matter and that the latter is not a singular motive for addressing the former. The HPCSA must concurrently pursue other opportunities to advance the protection

	and care of GBV victims.
h) Peer-reviewed Publication: African Journal for Emergency Medicine (AFJEM)	The defence of Critical theory in EC/DV research was published in the African Federation for Emergency Medicine Journal (Naidoo N. , From conception to coherence: the determination of correct research posture, 2011). This was the author's ruminations about paradigmatic choice, to frame this study.
i) Peer-reviewed Publication: Agenda: Empowering women for gender equity. (Annexure 26)	Supported by a collaborative endeavour between HEI's and NGO's, this publication appraises current success with perpetrator rehabilitation and proposes a salutogenic approach in addition to criminogenic approaches (Naidoo & Nadvi, 2013). This paper was shortlisted and acknowledged by Taylor & Francis (publishers) as contributory toward MDGs.
j) Peer-reviewed Publication: African Safety Promotion Journal (ASPJ) (Annexure 26)	This aspect of the literature review published in a MRC/UNISA journal documents the original methodological contribution of EiDM in EC and Forensic Practice and evidence-informed practice recommendations for DV (Naidoo, Artz, Martin, & Zalgoanker, 2014). It emanated from the EiDM process.
k) Conference/oral presentations by the researcher pertinent to the PhD study	GBV and Communities of Practice. South African Violence Initiative (SAVI) Conference. 2013. Cape Town, RSA GBV, Perpetrator rehabilitation and Salutogenesis: Round-table Conference. 2013. Institute for Justice and Reconciliation (IJR). Cape Town, RSA A response to Social Determinants of Health (A workshop co-presented with S Harrison). The Network: Towards Unity for Health. 2014. Forteleza, Brazil Salutogenesis and Global Health. Global Health Conference. 2015. Gaborone, Botswana Domestic violence and bullying relationships: the roles emergency care providers play. 2016. International Conference on Emergency Medicine (ICEM). Cape Town, RSA. (Poster)
l) Mandatory reporting of child abuse by EC providers: guidelines (Annexure 27)	Current gaps in the SA legislation (Children's Amendment Act, Act 41 of 2007) do not explicitly obligate EC providers to report child abuse. To address this oversight, mandatory reporting guideline was submitted to the HPCSA for consideration to promote child safety and ethical conduct in terms of ethical rules.

F. ***Recommendation: Professionalise EC and DV Responses***

The reciprocal implication is that EC providers must professionalise to improve the confidence among DV victims of the EC provider's ability to assist. The victims of DV are in many respects clients as they often do not have choice, are rendered vulnerable and are in need of expert advice. The non-negotiable components of professional identity (de Vos, et

al., 2011) and EC developmental requisites are: a systematic body of abstract and professional knowledge, genuine professional autonomy and a formalised code of ethics and the ideal of professional norms of public service (in terms of the individual, community and society) through an ethical and stance. Considering that EC providers may encounter cases of abuse (besides sexual offences), it seems reasonable to call for an amendment for the EC profession to be included in subsection (1) of section 110 (Children's Amendment Act, Act 41 of 2007), or alternately, to define "medical practitioner" to be inclusive of EC providers. The PBEC, HPCSA should also consider and endorse the child abuse reporting guidelines presented as an outcome of this study (Annexure 27).

G. ***Recommendation: Curriculum Reform to Empower Educators and students***

Historically EC education undermined the curriculum as a quality mechanism as it bordered on indoctrination and conditioning, given a heavy reliance on biomedical protocols (Christopher, 2007). However, The curriculum is a significant standard setting and quality assurance mechanism of the HPCSA [125]. As indicated in the results, behaviourist approaches are challenged by DV and the EC need for significant learning[126]. Competence-based curricula and frameworks are useful for stipulating the knowledge, attitude and skills required. Primarily, competence reflects a minimum rather than excellent standard. Competence "is necessary, but not sufficient to guarantee performance" (Clements & Mackenzie, 2005, p. 518), to which EC should aspire. Skills for health competency themes for EC in general (Clements & Mackenzie, 2005, p. 517) are listed below. Responding proactively to DV emergencies also involves the requirement to:

- Assess, prioritise, and direct individuals presenting for emergency assistance
- Investigate and determine individual's health status and needs in relation to emergency assistance
- Assess individuals needs for EC
- Provide specialist emergency intervention/treatment/care
- Support and empower users of emergency services

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[125] Judgement by JM Hlophe and DH Zondi in (Section 20 Appeal): Emergency Medical Supplies and Training CC t/a EMS v Health Professions Council of South Africa and Another (A15/07) [2011] ZAWCHC 393 (28 October 2011) Available from: http://www.saflii.org/za/cases/ZAWCHC/2011/393.html

[126] Significant learning measures learning by the extent of change derived.

- Obtain and use information to promote and protect health
- Work within an ethical framework
- Work with others to ensure effective service provision
- Coordinate and control emergency service provision
- Protect the health, safety, and security of service users and practitioners.

Training level description must be adjusted for each professional category, but at the end of an academic programme, the prehospital EC provider should have the general pedagogic outcomes listed in Chapter 3 and validated in this study. The core curriculum should include: key concepts, guiding principles, screening guidelines, collection of forensic evidence and key concepts in clinical management.

For clinical scope changes, particularly in sexual violence cases, the HPCSA must first approve. The evidence collection requirements exist (The National Centre for Knowledge on Men's Violence Against Women, 2011), but it is up to the HPCSA to determine which category of staff is able to perform what skills and under what conditions. DV crisis intervention could be a skill addition that is qualification neutral[127], given the self-efficacy finding among even basic qualified providers.

H. *Recommendation: Promote a Sense of EC Coherence Through The Risk-Need-Responsivity Model*

The specific objective was to develop an original theoretical analysis that explicates what should happen in the EC field as an emergent health profession to effect positive change in its professional response to GBV. The historical and current reality of EC contribution to health promotion has been in tertiary prevention. Now the Risk assessment allows entry to primary and secondary prevention (early detection). The RNR Model of DV Intervention as facilitating of the salutogenic 'general resistance resources', may promote professionalism and professionalization in EC. Its success however is contingent on the conception of the DV burden on EC and behavioural pathology of DV.

The high mortality from DV is indicative of health and justice system deficiencies and failures and entrenched cultures of health-seeking behaviour. This is against a backdrop of

[127] The EC scopes of practice are exclusive to the qualification. The DV screening and child abuse reporting guidelines would be among the few clinical guidelines common to all qualifications.

communicable disease burdens and limited access to appropriate care in contexts in need of economic redress and health reform. A focus on professionalism in DV responses is desirous. A strong community of practice approach is advocated, with the promotion of the Risk-Need-Responsivity model and the EC provider as a salutogenic resource (Antonovsky, 1996). Unless a collective and synergistic approach is adopted by the GBV intervention community, efforts will be too fragmented to enable sustainability and desirable outcomes in GBV prevention, elimination and human rights protection.

The sense of coherence (Antonovsky, 1996) for EC providers may be, in the first instance, achieved by sufficient motivation to contribute to GBV prevention and management. This can be meaningfulness (wish to cope) derived, for example, from trusting that EC contributes to femicide risk reduction. Secondly, comprehensibility is the cognitive component of understanding the belief challenge. This is likely to emerge from more responsive curricula and reflective practice. Thirdly, for the behaviour to be responsive to the DV needs, a sense of manageability must prevail [the belief-resources to cope (Antonovsky, 1996)].

Confidence in HPCSA or EMS evidence-informed protocols for GBV responses will improve compliance and responsivity. The eco-systemic model contextualises EC as a health resource. Coherence is also needed at the organisational level. The HPCSA has an accountability role to play by protecting the public interest through guidance of the professionals. These stakeholders function with the support of civil society, also embedded in every layer and within the health, social and economic regulatory framework, suggesting an eco-systemic approach (Lebel, 2008).

The RNR model could articulate with Tier 1 of Joyner's comprehensive IPV model (Joyner & Mash, 2012a) as it serves to improve DV detection. This may enhance the value proposition of both models in a context where PHC detection is less than 10% and EMS detection was previously not documented.

I. ***Recommendation: Promote Critical Engagement between the Stakeholders above Around the Following Reciprocal Obligations:***

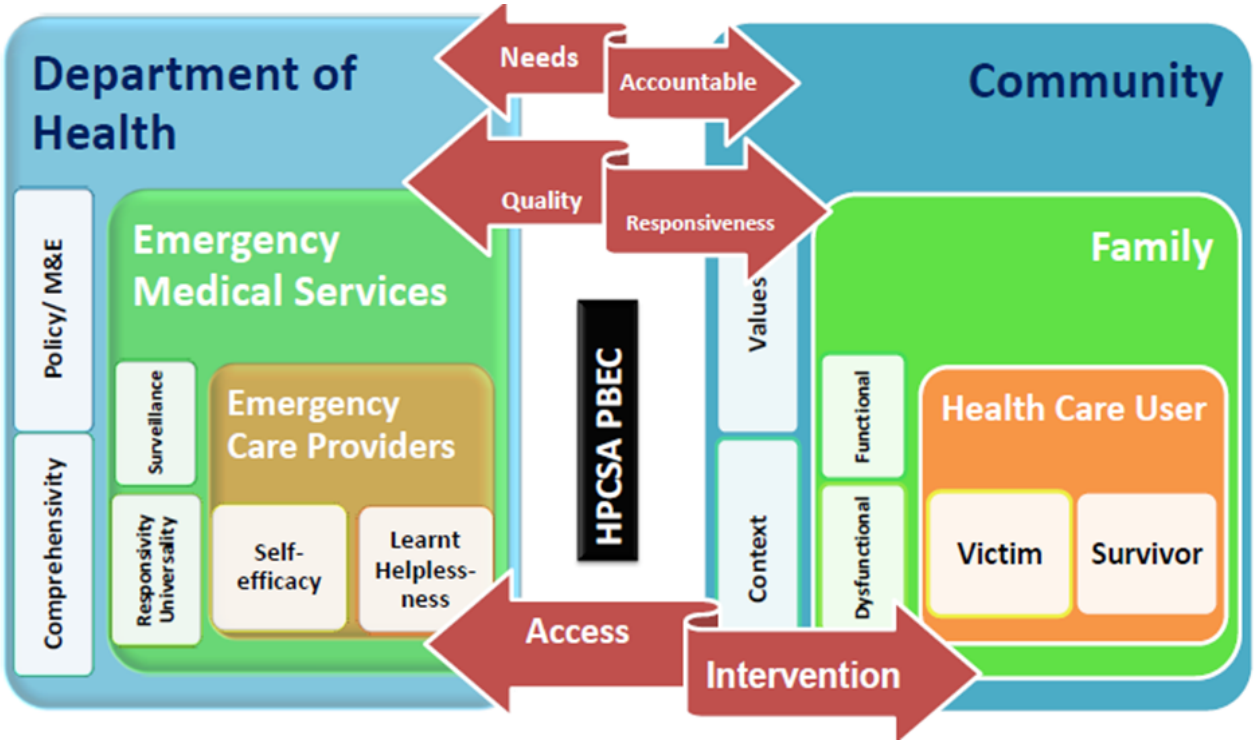
i. Health care users must have equitable access to EC providers who must provide health care interventions relevant to and alleviating of the pathology.

ii. Families' expectations are of a high quality service, free of prejudice and protective of the family interests. The responsiveness of the EMS is a hallmark of the perceived quality.

iii. Overall accountability to communities for comprehensive care and need-responsive policy is the Department of Health, who regulates the EMS.

iv. The HPCSA only has jurisdiction over the registered health care provider, not organisations. To fulfil the public protection mandate, it must engage with the EMS and DoH entities in the public interest. Alternately, it should seek to widen its powers/jurisdiction to address coercive contexts within EMS organisations that place practitioners and DV patients at avoidable risk.

Figure 41: The eco-systemic (embedded & interactive) conceptual frame for DV stakeholders' reciprocal obligations (not drawn to scales of influence)



The above obligations are depicted in Figure 41 and are central to obtunding the divisions of profession, patient, administrator, lay community, *and etcetera*; akin to those singular identities that fuel violence in the world (Sen, 2006). The EC identity is in need of 're-visioning', beyond narrow biomedical models, to the extent that EC is a public interest resource toward social justice, defined not by a common uniform, but by the common responsibility to respond to those made most vulnerable in society.

J. *Recommendation: EC Scholars Should Locate and Diversify GBV Research on the EC Agenda*

A firm and frequent theme emerging from this study was that GBV should be placed on the EC research agenda. The application of the conceptual compass (Figure 42 below) is a novel application to assist novice EC/GBV researchers to locate their studies in terms of design and discipline; theory or practice, without undue influence of biomedical bias.

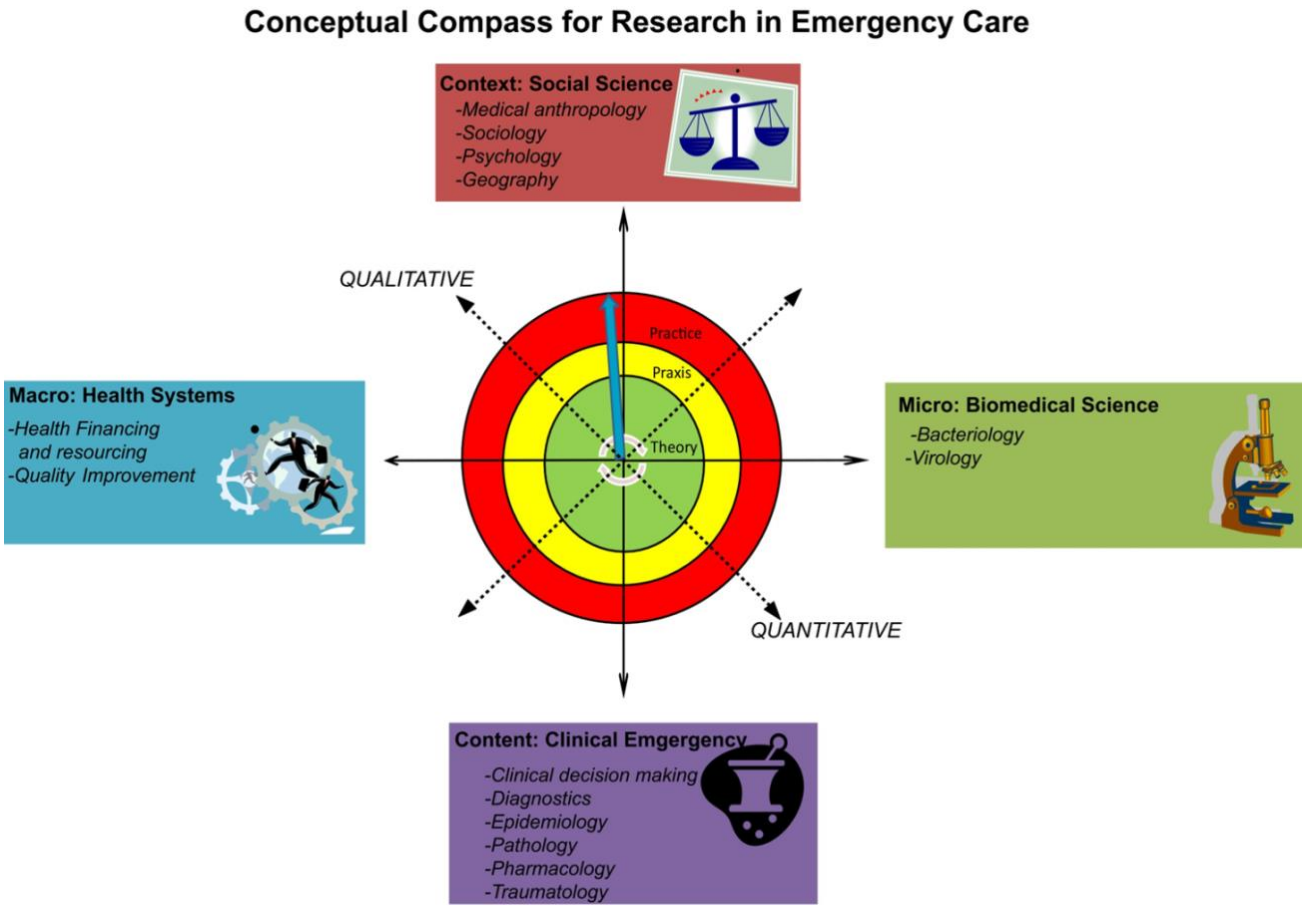
Intersections between disciplines are possible. The value of this tool is that it acts as a conceptual 'GPS', highlighting the study focus between four main domains: the micro level (such as laboratory studies involving HIV infection amongst GBV victims), the macro level (such as health systems responsivity to DV), the social science context (such as the psychology of violence) and the clinical EC content (e.g. behavioural pathology of DV and help-providing conduct by EC providers).

By mapping studies progressively (in real time or *post facto*), it is possible to determine design or discipline bias and hence point out EC research gaps and opportunities. Each of the disciplines in the domains is research-worthy and non-exclusive. If up-scaled, this tool could benefit the National Health Research Ethics Council endeavour to track research.

In order to use the tool, EC scholars must first conceptualise the research question, then locate on either the vertical or horizontal axis, the direction toward which the question leans. Consideration must be had for the role and extent of theory, praxis or practice (the field). If the question necessitates an intersection between domains, then map both axes and the perpendicular intersection indicates the relative 'location' of the study and the nature of theoretical and empirical literature to consider. It is therefore indicative of the 'epistemic

lean' of the anticipated study and over time the mapping will highlight neglected areas of research. For mixed methods studies, repeat the procedure. In short, it suggests what the study is, is not, is more of or is less of and in this way, the study focus is calibrated.

Figure 42: Conceptual Compass for Research in EC (Naidoo, 2012)



7.2 Conclusion

The aim of the study was to document, define and strengthen the role and scope of the South African (prehospital) EC discipline with regard to DV, within the context of a national and global health sector response to GBV. The aim, when translated into a question read: What is the role and scope of the South African (prehospital) EC discipline with regard to DV. This aim was achieved with the finding that: the most pragmatic intervention is to implement, monitor and evaluate prehospital routine and universal screening for DV. In the interest of social and health relevance, and in response to the DV burden, EC, as a discipline, must facilitate bio-psycho-social responses to DV and not be 'enslaved' by narrow conceptions of EC, such as tertiary/'downstream' clinical interventions only. EC responses to DV should be guided by Evidence-based Medicine, to enable accountability, scientific and practice rigour; and time, cost and outcome efficiency.

The paradigm, critical theory, provided an enabling 'posture'. In itself, this is a novel implication as critical theory was not found to be documented amongst South African EC literature. The methodology, exploratory sequential mixed methods, was not an initial choice, but proved invaluable in seeking credible answers to the questions raised. Hardly a compromise, it became a methodological choice after qualitative methods alone provided descriptive but not sufficiently compelling evidence about the EC role and scope in response to DV. The qualitative phase found challenges and threats to responses require organisational/ideological change as paradoxical practice exists relative to domestic violence behavioural pathology. Further, role-definition, identity and violence re-contextualisation is needed amidst ambivalent and contradictory positions. Emergent theoretical propositions include: typologies of victims, perpetrators and stakeholder responses; an eco-systemic relationship of state/societal expectations; and a 'conceptual compass' for preventing systemic research bias. Interviews with managers/policy-makers, focus group discussions of clinician-educators and non-participant observation of simulated EC practice resulted in an estimation of best practice for EC in DV cases and hypothesis generation regarding a probable gap in EC practice. Notwithstanding that Phase I appear as 'low-hanging fruit', it did provide 'thick' descriptions of the DV-EC experience in a manner not previously documented in EMS. As an insider in EC, the researcher experience was one of resonance with the participant experience on a number of issues. It is not the case that practitioners do not wish to change practice, but a case of the change proposition

not being clearly articulated or understood. The researcher found that one cannot simply undo one's insider status in the EC system, nor one's victim history or role as advocate and clinician. In Phase I, the researcher does not (and perhaps cannot) claim the kind of objectivity that would be expected of forensic or emergency medicine discourse. In evaluating the qualitative methods, the axiological value of subjectivity in Phase I is admitted to and perhaps, claimed.

The cohort study brought a tangible and concrete perspective to what a relatively brief intervention could achieve. The extraordinary support experienced from managers and operational crew of all ages, gender and qualifications was inspiring, but it would seem threats to confidentiality, from multiple patients, are the primary barrier to routine screening. The hypothesis was about DV detection rate improvement in a public EMS organisation. The test was dependent on the assumption that the underlying rate of DV in EMS cases is the same before and after implementation of the screening tool in a cohort study. This seemed reasonable as a hypothesis as the overall time frame (12 weeks) was not large enough to expect a radical shift in DV incidence in society, and there was no reason to suspect that the implementation of the screening tool itself might affect the DV incidence in society. Having confidently rejected the null hypothesis, there was compelling evidence that the DV detection rate had increased after the intervention as compared to before. This technically does not demonstrate causality, but in the absence of any other plausible explanation for the increase besides the intervention, the intervention is likely to have caused it. Applying the DV training and screening tool just as it was applied in the study may yield approximately a threefold increase in the DV detection rate (i.e. from 0.51% to 1.51%). If the DV training and screening tool are applied more rigorously—i.e. EMS workers are required to use the tool—then the increase in the DV detection rate is likely to be far greater (nine-fold), as suggested by the minimum 4,79% detection rate amongst the 75 individuals who implemented it and returned the DV screening tool. Although participant attrition is expected in a cohort design it is noteworthy that the 75 practitioners treated an estimated 4,046 cases (23,3% of eligible cases). An estimated 17,373 eligible cases (of 55 855 cases) were treated by all those enrolled in the study. The cohort study found bio-psycho-social responses and prehospital screening for domestic violence is effective, but far from the societal prevalence of DV. The study period was also too short to prove sustainability (Goodacre, 2015) of the intervention and its probable effect. The evaluation of

prehospital met and indeed unmet need was prudent, with no adverse events reported. These rates are unprecedented for South African EC and support screening-policy implementation.

In the mixed interpretation, both Phases led to three categories of understanding. Firstly, the DV health burden warrants EC conceptualisation of the EC burden of DV and an awakening to the unacceptability of current EC approaches. The difference in domestic violence detection, quantifies the extent of the practice gap potential, with an alarming and unprecedented *missed* DV case detection of 42,8 per 1000 EMS patients. Secondly, the study finds that there is a risk of regulatory and EMS 'capture' mediated by masculine hegemony and resuscitation bias. Thirdly, EC professionalization would likely benefit from a community of practice approach to DV burden.

With regard to future research, more research is needed in the evolving epidemiology of DV, the health needs of victims *and* perpetrators and the role of prehospital systems, in particular-EMS, in promoting health and preventing the morbidity and mortality associated with DV. The role of the communications centre in GBV intervention requires further exploration. The RNR model is only conceptually postulated here. The development of toolkits and criterion referencing for the RNR model is warranted as a post-doctoral endeavour. Vicarious traumatisation (manifesting as compassion fatigue) is a particular risk for caregivers. Salutogenesis may hold value for enhancing practitioner resilience and a sense of coherence in EC and must therefore be on the EC research agenda. Community of practice, EMS strategies for sentinel surveillance, point of care testing and forensic practice in EC are all areas in need of EC research. Evidence-based practice (Griffiths & Mooney, 2012) requires information generation and knowledge translation. The communications centre database must be enhanced for more precision on the collection of DV-related data that could generate new questions.

Social determinants of violence, health seeking and providing behaviour and maternal risk identification in GBV are also in need of research. A body of new knowledge on EC and forensic medicine ethics will bode well for DV responses and enhance existing guidelines on ethics (Department of Health, 2015). The understanding of pitfalls and how to optimise

the teaching and practice of clinical reasoning in DV contexts is an urgent need of the profession (Nixon, 2013). Barriers to accessing health-justice and sustainability of interventions must be explored as is criminal-justice attrition (Artz & Jefthas, 2011). The cohort study informed the secondary prevention role EMS could play. More policy is needed in the area of clinical case-finding and facilitating prompt treatment through the EMS. More research is needed in the EC role in primary prevention modalities.

Violent injury requiring critical care (such as that from DV) must be addressed by meaningful, sustained tracking and study of the epidemiology, clinical care, outcomes, and costs of critical violent injury. “Research must aim for not only information but also action, including effective interventions to prevent and mitigate the consequences of critical violent injury” (Riley, et al., 2015, p. 2460). However, return of spontaneous circulation (ROSC) need not be the EMS ‘illusive destiny’ and upstream interventions need not be seen as unattainable. Validating methods new to EC and contributing to theoretical and empirical growth of the profession are critical endpoints for future research and EMS practice (Sawyer, Coles, Williams and Williams, 2015). The phenomenon of Forensic EC needs a research agenda developed to chart the course of discourse elevation through both forensic and emergency medicine. This research awakens us to the DV screening potential and broader health promotion and forensic role latent in the EC profession.

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ANNEXURES

Annexure 1: DV Screening Protocol and HPCSA approval

Hi Lerato

Kindly see below and extract from the Council minutes of the Council meeting held on 15 October 2013

1.1 DOMESTIC VIOLENCE SCREENING PROTOCOL

COUNCIL 25/OCT 2013

Council **NOTED** that the Professional Board for Emergency Care identified a need for a Domestic Violence Screening Protocol and same was developed and inputs sought from various Boards and relevant stakeholders.

Council **NOTED** and approved the domestic violence screening protocol.

Kind regards,

Janine Williams
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CLINICAL GUIDELINE: DOMESTIC VIOLENCE SCREENING

PREPARED FOR PROFESSIONAL BOARD FOR EMERGENCY CARE by N Naidoo

1. Preamble: The mortality associated with Domestic violence becomes apparent when one considers that one woman is killed every 6 hours by an intimate partner (Mathews *et al*., 2004). Domestic Violence survivors "*express a strong desire for compassion, trust and understanding from health care professionals*" (Joyner, 2009). A public health study of attitudes and beliefs of emergency care providers elicited a poor level of understanding of the problem of domestic violence (Naidoo, 2007). Only 49% of respondents could define domestic violence. Provider qualification was associated with domestic violence definition in that basic providers were more likely to define incorrectly than their advanced counterparts. Eighty-one percent of respondents recognized less than thirty (30) domestic violence calls in six months. Considering the high incidence and prevalence of domestic violence (WHO, 2006), this suggests a probable low detection rate amongst the majority of emergency care providers.

There is harbouring of myths that necessitate the implementation of a pre-hospital protocol for domestic violence management. There is an inadequacy of current emergency care practice with respect to domestic violence crisis intervention with regards to screening, management and referral. The majority of emergency care providers (89%) experienced no special handling of domestic violence victims. No significant correlation could be found between qualification and knowledge of domestic violence laws. Qualification is not a predictor of legal knowledge about abuse. Qualification could also not be positively correlated with the referral of victims, although the majority of all qualifications (78%) had only sometimes referred victims or not at all (Naidoo, 2007).

This poor response by and lack of preparedness of ECP's is counter-productive to the HPCSA's motto and legal obligation to "Protect the public and guide the professionals". The lack of direct ethical obligations and operational guidance (in the form of protocols) has potential to render the HPCSA complicit in not enabling healthcare professionals to respond to domestic violence and its health-related consequences. The proposed ethical and protocol guidelines below serve to contextualize the clinical discretion practitioners enjoy in the interest of universal (routine) screening for domestic violence.

2. Definition of terms:

2.1. Domestic violence:

"Any controlling, abusive, fear inducing act that threatens to harm the health, well-being or safety of a person in a domestic relationship" (The Domestic Violence Act, No 116 of 1998). *"Any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivations of liberty, whether occurring in public or private life"* (United Nations, 1993). This is contextualised within a past or present relationship. It is generally perpetrated by a male partner, but not exclusively, and is experienced by the woman as harmful and destructive to herself, physically, emotionally, socially and psychologically (Family Violence Prevention Fund, 1999). Domestic Violence is a form of Gender-based violence or interpersonal violence and does not preclude men and children as victims.

2.2. Gender Based Violence:

"Gender-based violence is any harmful act that is perpetrated against a person's will and that is based on socially ascribed (gender) differences between males and females. Acts of GBV violate a number of universal human rights protected by

international instruments and conventions. Around the world, GBV has a greater impact on women/girls than on men/boys. *"Gender-based violence"* is interchangeable with *"violence against women".* It highlights the relationship between the subordinate status of women in society and their increased vulnerability to violence. Men and boys may also be survivors of gender-based violence, especially sexual violence. The nature and extent of specific types of GBV vary across cultures, countries, and regions. Examples of GBV include: sexual violence, including sexual exploitation/abuse and forced prostitution; domestic violence; human trafficking; forced/early marriage; harmful traditional practices such as female genital mutilation, honour killings, and widow inheritance" (United Nations, 2005).

3. PROFESSIONAL/ ETHICAL REQUIREMENTS OF THE HPCSA:

Health care professionals must be responsive to domestic violence by the following actions:

3.1. **Screening**: Ask gently about violent and/or controlling behaviour and believe response
3.2. **Assess Risk**: Conduct a risk assessment to identify imminent danger
3.3. **Supportive care:** Provide supportive bio-psycho-social care
3.4. **Document:** Document any evidence of abuse
3.5. **Inform:** Inform patients of their rights, services and the legal remedies. Talk through the implications of domestic violence, including the risk of HIV (Joyner, 2010).
3.6. **Refer responsibly:** Referring clients to appropriate resources and to identify her support system

DOMESTIC VIOLENCE SCREENING PROTOCOL (ADULT AND CHILD)

PREMISE:

There is evidenced under-detection of domestic abuse in South Africa. There is evidenced insufficient training regarding a health sector response to domestic violence.

PURPOSE:

1. To protect victims of abuse from a lack of responsiveness from emergency care providers and in so doing perpetuate the cycle of abuse.
2. To guide emergency care providers in the universal screening of health care users for the early detection of abuse and to enable early and appropriate referral.

DUTIES OF THE ECP

Ensure that all who have experienced violence are not stigmatized or blamed when they seek help from health institutions such as emergency services (public or private).

1. Ensure that victims of abuse will receive appropriate medical attention and other assistance.
2. Ensure confidentiality and security.
3. ECP's should aim, to ensure that providers are appropriately sensitized to issues of abuse, treat women and children in particular with respect, maintain

confidentiality and do not reinforce women's /children's feelings of stigma or self-blame, as well as being able to provide appropriate care and referral as needed.

4. Support research on the causes, consequences, and costs of violence against women and effective prevention measures.

WHO SHOULD BE SCREENED FOR DOMESTIC VIOLENCE?

All females aged fourteen years and older should be screened for domestic violence. Men of any age may also be screened, based on the emergency care provider's index of suspicion. Abuse and neglect of children may also suggest incidence of domestic violence.

WHO SHOULD SCREEN FOR DOMESTIC VIOLENCE?

Screening should be conducted by an emergency care provider who has been educated about the dynamics of domestic violence, the safety and autonomy of abused patients and cultural competency. The emergency care provider must have been trained on how to ask about abuse and to intervene with identified victims of abuse. Of course the emergency care provider must also secure the opportunity to speak to the patient in a private setting to maintain trust and confidentiality. The emergency care practice should emphasize the particular nature and treatment of domestic violence, as concertedly as it does myocardial infarctions and CPR. Educational facilitators and managers in Emergency Services need to be sensitized to the magnitude of the problem. At the service level, responses to violence against women should be integrated into all areas of care (e.g. emergency services, reproductive health services such as antenatal care, family planning, and post-abortion care, mental health services, and HIV and AIDS-related services) [WHO, 2006]. The emergency medical system should no longer undermine its life-saving role in primary prevention and early detection. To this end, paradigm shifts in regulation, management and education of emergency care providers towards domestic violence intervention must occur and should include the content detailed below.

HOW SHOULD SCREENING OCCUR?

The universal screening protocol (Figure 1) is a tool to guide screening and management. Screening for abuse over the past year should occur at every trauma emergency call. For non-trauma calls, patients should be screened for any domestic violence that occurred anytime in their lives (or recent past). Screening should occur as part of routine health history taking or during a review of systems. It should be a standard part of a health assessment, but particularly important in cases of new chief complaints and new intimate relationships. During a face-to-face health care encounter, the emergency care provider must be direct and non-judgmental. Screening must take place in private, where no friends or relatives of the patient are present. Preferably, no children over two should be present as they pose a risk to confidentiality. Patients should be told of the confidentiality of the conversation and also told of the limits of that confidentiality. Ideally, screening for domestic violence should also be included as part of a written health questionnaire and in the patients primary language. The emergency

medical system's communication centre has the technology to facilitate telephonic screening, more appropriate dispatch, appropriate referral, and even telephonic crisis intervention. The call centre operators, however, do need capacity-building in terms of domestic violence crisis intervention skills.

DOCUMENTING DOMESTIC VIOLENCE

As a result of routine screening, patients may disclose domestic violence. These patients must be assessed as soon as possible and the findings documented. Emergency care providers must remember to believe victims testimony and to respond correctly and with dignity. Failure to do so may result in further non-disclosure, mistrust, shame and guilt. The examination form is a confidential medical record and must be treated as such. Where applicable, the exact words of the patient must be documented, as must be the identity of the offender and his relationship with the patient. All history of abuse as well as the presenting complaint must be documented, even if in cases of pre-hospital discharge.

SAFETY ASSESSMENT

A safety assessment **must** be done for all patients who disclose domestic violence. Continued exposure to the violence may place the patient in grave danger. If the patient feels unsafe, referral to the South African Police Services may be crucial. If the patient is uncertain, establish the following and then facilitate the development of a safety plan:

- Has the violence increased?
- Does the perpetrator use alcohol and drugs?
- Has the perpetrator threatened to kill her/ him?
- Does the perpetrator have access to weapons?
- Is the patient afraid to go home?
- Has the patient/perpetrator thought about killing herself/ himself?

Key References

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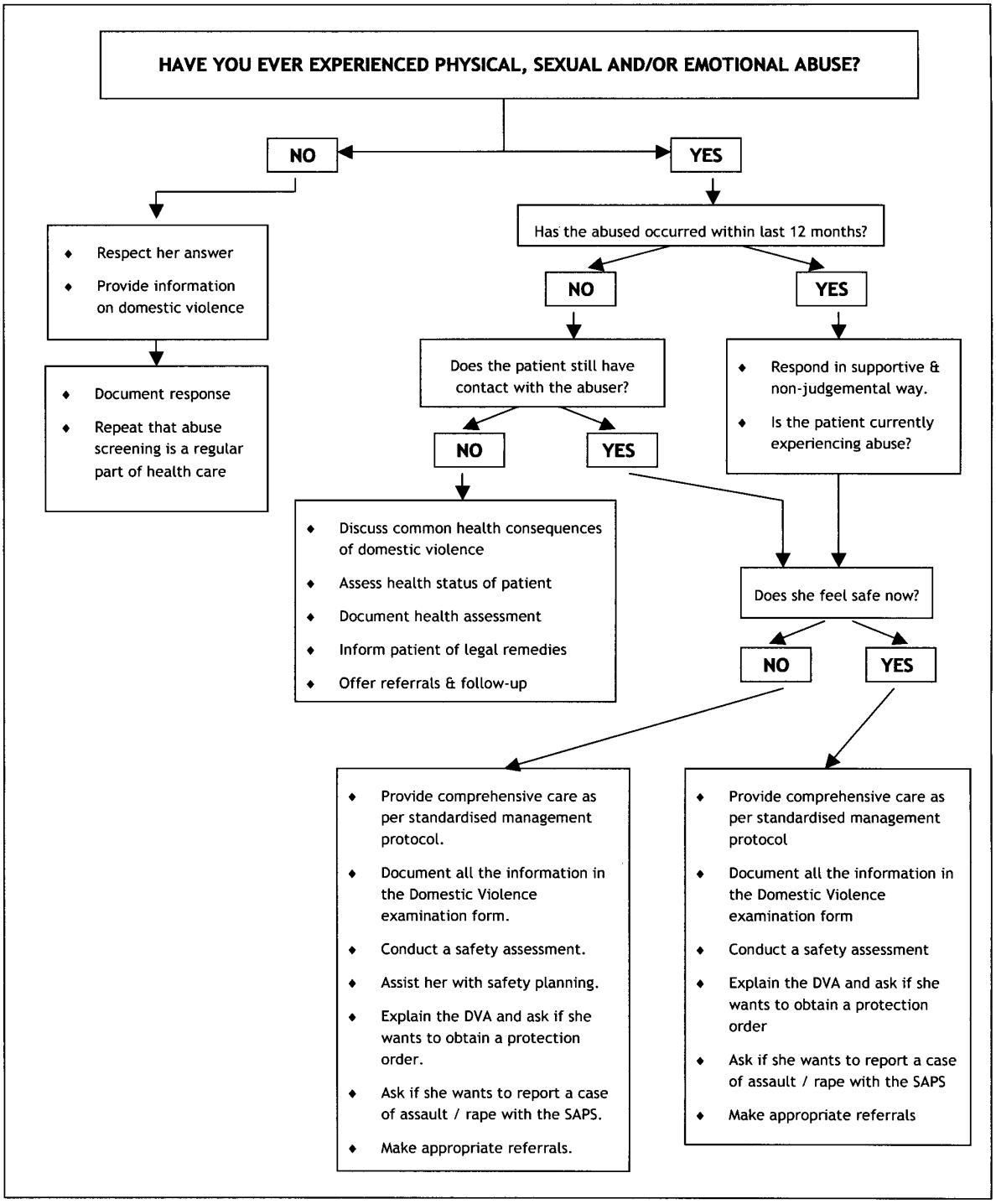
Figure 1: Screening Protocol for Abuse (Martin and Jacobs, 2003)



Abbreviations: DVA- Domestic Violence Act 116 of 1998, SAPS- South African Police Service

Appendix 1: Critical Appraisal Criteria

QUANTITATIVE RESEARCH EVIDENCE SCORING CRITERIA									
Is the evidence RELEVANT?			**Is the evidence ROBUST?**			**Is the evidence UNBIASED?**			**RANK**
Question (3)	Topic (3)	Context (4)	Sample (4)	Measures	Analysis (5)	Author (3)	Institution (3)	Conflict of Interest (2)	
3- Clear (unambiguous) and directed at pre-hospital health care providers; 2-Clear (unambiguous) and not directed at health care providers; 1-Unclear (ambiguous) and non-directed towards health care providers.	3-Highly relevant towards pre-hospital health care providers and GBV/ DV; 2-Relevant to healthcare providers and GBV/ DV; 1-Irrelevant to health care providers and/ or GBV/ DV.	4- South African Context pre-hospital context; 3- South African Context in-hospital context; 2- African pre/in-hospital context; 1-Other Context.	4- Large sample (500+); 3- Medium (200-499) 2-Small (50-199); 1-Very small (0-49).	3- Highly reliable (All measures appropriate for variables as well as internal consistency) 2- Fairly reliable (Some measures appropriate for variables as well as internal consistency) 1-Unreliable (Inappropriate measures and inconsistent)	5 – meta analysis (several studies that have hypothesis related to DV); 4-systematic reviews for DV; 3- RCT's for Interventions or other measures for DV prevention; 2- Experimental/ descriptive/ analytical studies; 1- Opinion related to DV prevention.	3 –No evidence of author bias; unknown or no preference 2 –some evidence of author bias; prior preference evident 1 – Obvious bias evident; prior preferences evident	3 – No institutional bias; study independence evident 2 – some institutional bias; study independence uncertain 1 – Obvious institutional bias present; study independence compromised	2 – no potential conflict(s) of interest; 1– Potential conflict(s) of interest.	SCORE

NON-RESEARCH EVIDENCE SCORING CRITERIA							
RELEVANT			**ROBUST**		**OBJECTIVITY**		**RANK**
Question (3)	Topic (3)	Context (4)	Sample (3)	Evidence Source (3	Author 3	Conflict of Interest (2)	
3- Clear (unambiguous) and directed at pre-hospital health care providers; 2-Clear (unambiguous) and not directed at health care providers; 1-Unclear (ambiguous) and not directed towards health care providers.	3-Highly relevant towards pre-hospital health care providers and GBV/ DV; 2-Relevant to healthcare providers and GBV/ DV; 1-irrelevant to health care providers and/ or GBV/ DV.	4- South African Context pre-hospital context; 3- South African Context in-hospital context; 2- African pre/in-hospital context; 1-Other Context.	3- Multiple perspectives 2- Single perspective 1-Unclear	3- Well known/ highly acclaimed reliable source 2- Moderately reliable source 1-Unreliable source	3 – Unknown expectation or preference; objective reporting; high specificity 2 – prior expectation or preference evident; subjectivity present 1 – highly subjective, hardly objective.	2 – no potential conflict(s) of interest; 1– Potential conflict(s) of interest.	INDICATE SCORE HERE

Scores for Quantitative Research Evidence										
ARTICLE NO.	RELEVANT			ROBUST			UNBIASED			SCORE /30
	Question (3)	Topic (3)	Context (4)	Sample (4)	Measures (3)	Analysis (5)	Author (3)	Institution (3)	Conflict of Interest (2)	
158	3	3	2	4	3	2	3	3	2	25
71	3	3	1	4	3	2	3	3	2	24
31	3	3	1	4	3	2	3	3	2	24
55	3	2	1	3	3	3	3	3	2	23
27	3	3	2	3	3	4	2	2	2	23
36	2	3	3	4	3	2	2	2	2	23
41	2	2	3	3	3	4	2	2	2	23
45	3	2	1	3	3	2	3	3	2	22
11	3	3	1	4	3	2	2	2	2	22
18	3	3	1	4	3	2	2	2	2	22
70	3	3	1	4	3	2	2	2	2	22
54	2	2	1	4	2	2	3	3	2	21
39	2	2	2	2	3	4	2	2	2	21
34	2	2	2	4	3	2	3	3	2	21
163	3	3	1	1	2	2	3	3	2	20
2	2	2	1	4	3	2	2	2	2	20
6	2	2	1	4	3	2	2	2	2	20
13	2	2	1	4	3	2	2	2	2	20
14	**2**	**2**	**1**	**4**	**3**	**2**	**2**	**2**	**2**	**20**
19	3	3	1	2	3	2	2	2	2	20
73	2	2	1	4	3	2	2	2	2	20
164	2	2	1	4	3	2	2	2	2	20
47	2	2	2	3	3	2	2	2	2	20
7	2	2	1	3	2	2	2	2	2	19
21	2	2	1	2	3	3	2	2	2	19
22	2	2	1	3	3	2	2	2	2	19
126	3	2	1	3	3	2	3	2	1	19
135	1	2	2	4	3	2	3	2	1	19
144	2	2	1	3	2	3	2	2	2	19
154	3	3	1	1	2	2	3	2	2	19
5	2	2	1	2	3	2	2	2	2	18
138	2	2	1	2	2	3	2	2	2	18
153	3	3	1	1	2	2	3	2	1	18
24	2	2	2	1	2	2	3	2	2	18
16	2	2	1	1	3	2	2	2	2	17
35	2	2	1	1	3	2	2	2	2	17
162	2	2	1	2	2	2	2	2	2	17
32	2	2	1	1	1	2	3	3	2	17
134	2	2	1	1	2	2	3	2	1	16
8	3	2	1	1	2	1				

40

Scores for Non-Research Evidence								
ARTICLE NO.	RELEVANT			ROBUST		UNBIASED		
	Question (3)	Topic (3)	Context (4)	Sample (3)	source(3)	Author (3)	Conflict of Interest (2)	Score / 21
68	2	3	4	2	3	3	2	19
9	2	3	4	3	2	2	1	18
37	3	3	4	3	2	2	1	18
12	2	3	4	3	2	2	1	17
97	2	2	4	3	2	2	1	16
61	2	2	1	3	3	3	2	16
20	3	3	1	2	2	2	2	15
24	1	2	1	3	3	2	1	13
76	2	2	1	2	2	3	1	13
81	1	1	4	3	1	2	1	13
8	2	2	1	2	2	2	1	12
100	2	2	1	2	2	2	1	12
88	1	2	1	2	1	2	1	10

13

Annexure 3: EiDM: Article Description Table

Citations of Research Evidence	Evidence type and Method	Direct Findings	Indirect Findings
(158) Edlin A, Williams B, Williams A, 2010. Pre-hospital provider recognition of intimate partner violence. In *Journal of Forensic and Legal Medicine*. Vol. 17 359-362.	*Type of evidence:* Secondary research *Method:* literature review	Pre-hospital providers are limited in their knowledge of, and ability to identify and report intimate partner violence. Educational interventions have the capacity to be increased in the short-term by educational training programs. Ongoing training is needed to ensure that paramedics increase their confidence in intimate partner violence screening.	Paramedics have a unique advantage and can play a role in early identification and intervention in intimate partner violence injury prevention.
(71) Mason, R; Schwartz, B; Burgess, R; Irwin, E. 2010. Emergency Medical Services: a resource for victims of domestic violence? Emerg Med J 2010;27:561e564. doi:10.1136/emj.2009.084129	*Type of Evidence:* Primary Research *Methods:* Survey	EMTs have frequent contact with victims of DV yet have received little education about the issue. The majority of those surveyed would like specific education and training on DV. Evaluating these programmes will be important with a prime consideration being whether or not increased education leads to improved patient outcomes.	In the near future all EMS providers should receive specific education and training on DV designed for their particular practice. To assist in analysing patient outcomes, as well as to improve patient documentation, consideration should be given to developing a standardised DV code to appear in EMS records. With a DV code in place, future research could include whether or not DV had been detected or suspected, and whether or not support and resources were offered to the abused woman.
(31) Boergerhoff, LA; Gerberich, SG; Anderson, A; Kochevar, L and Waller, L. 1999. Out-of-Hospital Violence Injury Surveillance: Quality of Data Collection. *Annals of Emergency Medicine*. 34:6. 745-750	*Type of Evidence:* Primary Research *Methods:* Descriptive/ Observational	Significant barriers to quality out-of-hospital data collection were identified during study implementation and in abstracted run reports. These barriers included the following: lack of organizational support; characteristics of the violence-related data elements; design of the ambulance run report form; and paramedic knowledge, attitudes, and behaviors regarding data collection.	The paramedics' reluctance to collect specific violence-related data elements, particularly regarding domestic abuse screening, female pregnancy status, and injury intent, suggests that these are new and sensitive areas of questioning. Yet, they are essential data elements in a prehospital violence injury surveillance system.
(55) Gregory A, Ramsay J, Agnew-Davies R, Baird K, Devine A, Dunne D, Eldridge S, Howell A, Johnson M, Rutterford C, Sharp D and Feder G. 2010. Primary Care Identification And Referral To Improve Safety Of Women Experiencing Domestic Violence (IRIS): Protocol For A Pragmatic Cluster Randomised Controlled Trial. In *BioMed Central*. Vol. 10 (54) 1-7.	*Type of Evidence:* Primary Research *Methods:* Pragmatic cluster randomised controlled trial	The primary outcome measure-referral to domestic violence advocacy - is an intermediate outcome, on a causal pathway towards reduced violence, and improved quality of life and mental health for women who are referred.	This is the first European randomised controlled trial of an intervention to improve the health care response to domestic violence.
(36) Christofides N and Jewkes R. 2010. Acceptability of Universal Screening For Intimate Partner Violence In HIV South Africa and Service Implications. In AIDS Care. Vol. (22) 279-285.	*Type of Evidence:* Primary Research *Methods:* Focus Groups	Women believed that being asked about intimate partner violence could be an opportunity for women in abusive relationships to access services and help.	Referrals to support groups and other services as possible outcomes of intimate partner violence screening
(41)Kilonzo N, Ndung u N, Nthamburi N, Ajema C, Taegtmeyer M, Theobald S and Tolhurst R. 2009. Sexual Violence Legislation In Sub-Saharan Africa: The Need For Strengthened Medico-Legal Linkages. In *Reproductive Health Matters*. Vol. (17) 10-19	*Type of Evidence:* Secondary Research *Methods:* Case study	There needs to be a linkage in the form of cross-referrals using standardised referral pathways and guidelines, protocols and medico-legal procedures in order to achieve comprehensive care for post-rape victims.	Common training approaches and harmonised information across sectors, and common indicators, would facilitate government accountability. Joint and collaborative planning and working at country level, through sharing of information and data between the different systems remain key to achieving this.
(45) Datner EM, Shofer FS, Parmele K, Stahmer SA and Mechem CC. 1999. Utilization Of The 911 System As An Identifier Of Domestic Violence. *In*	*Type of Evidence:* Primary Research *Methods: Cross-*	Intimate partners accounted for 67.2% of assailants. Of DV victims, 77% reported calling 911 for any reason in the past 2 years compared with 47% of nonvictims. DV victims were more likely to call 911 than	911 calls may serve as an indicator of ongoing abuse and may identify women at risk, providing a potential opportunity for intervention. Health care workers,

American Journal of Emergency Medicine. Vol. (17)6: 560-565.	*sectional, descriptive*	nonvictims for definite and possible cases of domestic dispute. Victims and nonvictims did not differ in the number of nondomestic dispute calls.	police officers, paramedics, social workers, and public health officials can work together to develop screening protocols for 911 systems that will be the most effective for victims.
(11) Husni ME, Linden JA and Tibbles C. 2000. Domestic Violence and Out-of-hospital Providers: A potential Resource to Protect Battered Women. In Academic Emergency Medicine. Vol. (7) 243-248.	*Type of Evidence:* Primary Research *Methods:* Retrospective Review of ambulance run sheets from a non-consecutive, convenience sample.	A substantial proportion of women refused transportation to the hospital. Out-of-hospital personnel should be trained with the tools to identify and document domestic violence, assess patient safety, offer timely resources, and empower victims to make choices.	Increased training and competence in assisting victims of violence may allow earlier intervention, before the violence escalates and the woman is seriously harmed.
(70) Lerner, EB;Fernandez, AR and Shah, MN. 2009. Do Emergency Medical Services Professionals Think They Should Participate in Disease Prevention? In Informa Health Care. Vol. 13 (1) 64-70.	*Type of Evidence:* Primary Research *Methods:* Survey	Majority of emergency care personnel thought that they should perform in disease and injury prevention programs.	Emergency care personnel with experience in disease and injury prevention thought that disease and injury prevention should take place during emergency calls.
(54) Berk RA, Yan H and Sorenson SB. 2005. Developing a Practical Forecasting Screener for Domestic Violence Incidents. *In Sage Publications*. Vol. 29 358-383.	*Type of Evidence:* Primary Research/ *Methods:* Guideline development	A screening instrument was developed based on a small fraction of the information collected. Making the screening instrument more complicated did not improve forecasting skill. Taking the relative costs of false positives and false negatives into account, the instrument correctly forecasted future calls for service about 60% of the time. Future calls involving domestic violence misdemeanors and felonies were correctly forecast about 50% of the time.	The 50% figure is important because such calls require a law enforcement response and yet are a relatively small fraction of all domestic violence calls for service.
(39) Waalen J, Goodwin MM, Spitz AM, Peterson R and Saltzman LE. 2000. Screening For Intimate Partner Violence By Health Care Providers: Barriers And Interventions. In *American Journal of Preventative Medicine*. Vol. (19) 230-237.	Type of Evidence: Secondary Research Methods: Review	Barriers to screening for intimate partner violence are documented to be similar among health care providers across diverse specialties and settings.	Education may increase intimate partner violence screening rates.
(34) Jewkes R, Levin K and Penn-Kekana L. 2002. Risk Factors For Domestic Violence Findings From A South African Cross-Sectional Study. In *Social Science and Medicine*. Vol. (55) 1603- 1617.	*Type of Evidence:* Primary Research *Methods:* Cross-Sectional study	The prevalence of experiencing physical violence from a current or ex-husband or boyfriend was 24.6%. 9.5% had been assaulted in the previous year. Domestic violence was significantly positively associated with violence in a women's childhood, her having no further education, liberal ideas on women's roles, drinking alcohol, having another partner in the year, having a confidant(e), his boy child preference, conflict over his drinking, either partner financially supporting the home, frequent conflict generally, and living outside the Northern Province.	No significant associations were found with partners' ages, employment, migrant status, financial disparity, cohabitation, household possessions, urbanisation, marital status, crowding, communication, his having other partners, his education, her attitudes towards violence or her perceptions of cultural norms on women's role. The findings suggest that domestic violence is most strongly related to the status of women in a society and to the normative use of violence in conflict situations or as part of the exercise of power.
(163) Weiss S, Garza A, Casaletto J, Stratton M, Ernst A, Blanton D, Nick TG 2000. The out-of-hospital use of a domestic violence screen for assessing patient risk. In *Prehospital Emergency Care*. Vol 4: 1.	*Type of evidence:* Primary research *Method:* Questionnaire	Emergency medical technicians can complete the domestic violence scene assessment screen (DVSAS). The DVSAS is able to reflect the results of the abuse assessment screen with moderate to good agreement.	

(2) Littleton HL, Berenson AB and Breitkopf, CR. 2007. An Evaluation of Health Care Providers' Sexual Violence Screening Practices. In *American Journal of Obstetrics and Gynaecology*. Vol. (196) 564.e1-564.e7	*Type of Evidence:* Primary Research *Methods:* Survey	A multi-ethnic sample of 945 low-income women responded to an anonymous survey regarding their discussions with health care professionals regarding sexual violence. Women find that discussion of sexual violence by their health care providers to be nonintrusive and helpful.	Educational, linguistic, and cultural factors appear to affect the likelihood that health care providers discuss sexual violence with their patients
(6) Waller AE, Hohenhaus SM, Shah PJ and Stern EA. 1996. Development and Validation of an Emergency Department Screening and Referral Protocol for Victims of Domestic Violence. In Annals of Emergency Medicine. Vol. (27) 754-760.	*Type of Evidence:* Primary Research *Methods:* Protocol development	In developing and validating a screening tool for referral used in an emergency department for victims of domestic violence, many obstacles in the domestic violence screening and referral protocol emerged.	Compliance to the protocol by emergency department for patient referral was poor. Long-term approach is needed for protocol adherence in the emergency department.
(13) Wadman MC and Mulleman RL. 1999. Domestic Violence Homicides: ED Use before Victimisation. *American Journal of Emergency Medicine*. Vol. (17) 689-691.	*Type of Evidence:* Primary Research *Methods:* Retrospective Study using police records	Women victims of domestic homicide often present to an emergency department before their deaths, and these visits may present health care providers with an opportunity to identify domestic violence and intervene. Universal screening should be done on patients entering the emergency department followed by the appropriate intervention(s).	The use of available resources such as screening tools and timely interventions may provide optimal treatment for these patients.
(14) Magen RH, Conroy K and Del Tufo A. 2000. Domestic Violence In Child Welfare Preventative Services: Results From An Intake Screening Questionnaire. In *Children and Youth Services Review*. Vol. 22	*Type of Evidence:* Primary Research *Methods:* Questionnaire (Screening tool)	Majority of women reported favourable reactions after being asked questions around domestic violence. Women that were battered and those that were not reported high levels of conflict in their families.	Most women reported taking action in the past to stop abuse.
(19) Weiss SJ, Ernst AA, Blanton D, Sewell D and Nick TG. 2000. EMT Domestic Violence Knowledge And The Results Of An Educational Intervention. *In American Journal of Emergency Medicine*. Vol. (18) 168-171.	*Type of Evidence:* Primary Research *Methods: S*urvey, instruction and a re-test	The results from the initial survey and post instruction test showed an increase in increase in knowledge. An improvement in the understanding of domestic violence was seen.	Multiple approaches that could be applied that could be applied which may lead to better long term outcomes.
(73) El-Bassel N, Gilbert L, Wu E, Chang M, Gomes C, Vinocur D, Spevack T. 2006. Intimate partner violence prevalence and HIV risks among women receiving care in emergency departments: implications for IPV and HIV screening. In *Emergency Medical Journal*. Vol. 24 255–259.	*Type of Evidence:* Primary Research *Methods:* Cross-sectional survey	For many women, intimate partner violence and certain HIV risk behaviours are frequent occurring health problems. .	HIV testing and intimate partner violence inquiry are important steps in identifying victims and referring them for appropriate care.
(47) McGrath ME, Bettacchi A, Duffy SJ, Peipert JF, Becker BM and St. Angelo L. 1997. Violence against women: provider barrier to intervention in Emergency Departments. In *Academic Emergency Medicine*. Vol. (4) 297-300.	Type of Evidence: Primary Research Methods: Anonymous structured surveys.	Providers (nurses, physicians and social workers in trauma centre) received little training in domestic violence. They also rarely screen for domestic violence. There are institutional and personal barriers impeding intervention in victims of domestic violence.	
(7) Maiuro RD, Vitaliano PP, Sugg NK, Thompson DC, Rivara FP and Thompson RS. 2000. Development Of A Health Care Provider Survey For Domestic Violence. *American Journal of Preventative Medicine*. Vol. (19) 245-251.	*Type of Evidence:* Primary Research *Methods:* Multiphase study design to develop items across eight	The measure provides a reliable method for assessing provider characteristics and training needs. It may also serve to evaluate training and policy interventions in DV.	Increased training and competence in assisting victims of violence may allow earlier intervention, before the violence escalates and the woman is seriously harmed.

	content domains		
(21) Thompson RS, Rivara FP, Thompson DC, Barlwo WE, Sugg NK, Maiuro RD and Rubinowice DM. 2000. Identification And Management Of Domestic Violence A Randomized Trial. *In American Journal of Preventative Medicine*. Vol. (19) 253-163.	*Type of Evidence:* Primary Research *Methods:*RCT; follow-up by survey, medical record review, and qualitative means.	Environmental enabling factors are relatively easy to initiate and are proven to increase inquiries about domestic violence, as well as a small increase in case findings.	
(22) Morrison LJ, Allan R and Grunfeld A. 2000. Improving Emergency Department Detection Rate of Domestic Violence Using Direct Questioning. In Journal of Emergency Medicine. Vol. (19) 117-124.	Type of Evidence: Primary Research Methods: Questionnaire	A simple direct questionnaire significantly improves the detection rate of domestic violence in the emergency department.	Direct questioning requires minimal time and the questions could be incorporated into the patient assessment
(126) Houry D, Feldhaus K, Peery B, Abbott J, Lowenstein SR, al-Bataa-de-Montero S and Levine S. 2004. A Positive Domestic Violence Screen Predicts Future Domestic Violence. *Journal of Iinterpersonal Violence*. Vol. 19 (9) 955.	*Type of evidence:* primary research *Method:* prospective cohort study	Screening in the ED for DV may identify a subset of women at heightened risk for subsequent verbal aggression and physical violence. a three-question DV screen identifies a subset of women in the ED who are at high risk for subsequent physical violence and verbal aggression.	It is unknown whether screening for DV in EDs, followed by counselling, referrals, and support, can change the risk of future DV-related injuries to those patients.
(135) Gass JD, Stein DJ, Williams DR and Seedat S. 2011. Gender Differences in Risk for Intimate Partner Violence Among South African Adults. *Journal of Interpersonal Violence*. Vol 26: 2764	*Type of evidence:* primary research *Method:* Cross-sectional study	Violence is a widespread and serious public health problem in South Africa, affecting both women and men in their intimate partnerships.	
(144) Witting MD, Furuno JP, Hirshon JM, Krugman SD, Périssé ARS and Limcangco R. 2006. Support for Emergency Department Screening for Intimate Partner Violence Depends on Perceived Risk. *In Journal of Interpersonal Violence. Vol* 21: 585.	*Type of evidence:* Primary research *Method:* survey	Both high risk and low risk patients should be screened for domestic violence.	
(154) Weiss S J, Ernst AA, Blanton D. Sewell D. Nick TG 1999. EMT Knowledge About Domestic Violence and the Effectiveness of Training. *In Annals of Emergency Medicine*. Vol 34: 4.	*Type of evidence:* Primary research *Method*: Survey	Although results improved from 59 % to 70% correct after 3 hours of instruction, a understanding of domestic violence was seen for only 4 out of 11 questions.	These results indicate the need for more instruction on DV for EMTs.
(5) Furbee PM, Sikora R., Williams JM and Derek SJ. 1998. Comparison of Domestic Violence Screening Methods: A Pilot Study. In *Annals of Emergency Medicine*. Vol. (31) 495-501	*Type of Evidence:* Primary Research *Methods:* Questionnaire/ Interviews	Approximately half of 186 subjects were screened for domestic violence in a face-to-face interview. The other half listened to a tape-recorded questionnaire and recorded their responses on a coded answer sheet. No significant differences were found between the two methods of screening for domestic violence on any measurement, including refusals.	

(138) Datner EM, Wiebe DJ, Brensinger CM and Nelson DB. 2007. Identifying Pregnant Women Experiencing Domestic Violence in an Urban Emergency Department. *In Journal of Interpersonal Violence. Vol* 22: 124	*Type of evidence*: primary research *Method:* Cohort study	*Findings:* Pregnant women presenting to the ED may be at greatest risk of current DV if they are young, have less than a high school education, have a prior diagnosis of trichomonas, and report current marijuana or alcohol use.	This subgroup of pregnant women should be questioned further regarding current DV and then provided interventional and/or resource services as appropriate.
(153) Weiss SJ, Ernst AA, Blanton D, Sewell D, and Nick TG. 2000. EMT Domestic Violence Knowledge and the Results of an Educational Intervention. In *American Journal of Emergency Medicine*. Volume 18: 2.	*Type of evidence:* Primary research *Method:* prospective pre-and post-interventional study	Domestic violence (DV) knowledge showed to improve from 54% to 71% with the introduction of a simple 3-hour educational intervention.	Improving the levels of knowledge about domestic violence is important in detecting and treating the DV victim.
(24) Jewkes R. 2002. Intimate Partner Violence: Causes and Prevention. *The Lancet*. Vol. (359) 1423-1429.	*Type of Evidence:* Secondary Research *Methods: Exposition*	Heavy alcohol consumption also increases risk of violence. Women who are more empowered educationally, economically, and socially are most protected, but below this high level the relation between empowerment and risk of violence is nonlinear. Violence is frequently used to resolve a crisis of male identity, at times caused by poverty or an inability to control women.	Primary preventive interventions should focus on improving the status of women and reducing norms of violence, poverty, and alcohol consumption. Risk of violence is greatest in societies where the use of violence in many situations is a socially-accepted norm.
(16) Kyriacou DM, McCabe F, Anglin D, Lapesarde K and Winer MR. 1998. Emergency Department–Based Study of Risk Factors for Acute Injury From Domestic Violence Against Women. *Annals of Emergency Medicine*. Vol. (31) 502-506.	*Type of Evidence:* Primary Research *Methods:* Case Control Study	The study aimed to to measure the association of selected predictor variables with acute injury from domestic violence against women. A history of alcohol abuse by the male partner, as reported by the female partner, was the strongest predictor for acute injury from domestic violence.	Large scale studies are needed to clarify the relationship between alcohol abuse, socioeconomic factors and acute physical assaults against women by their intimate male partners
(35) te Kolstee R, Miller JM and Knaap SFC. 2004. Routine Screening For Abuse: Opening Pandora's Box. *Journal of Manipulative and Physiological Therapeutics*. 63-65.	*Type of Evidence:* Primary Research *Methods:* Case Report	Routine screening for abuse is an essential element of history taking.	Awareness of the patients' experiences with domestic violence is required to keep appropriate adjustments in the management of the patient.
(162) Lejoyeux M, Zillhardt P, Chièze P, Fichelle A, Mc Loughlin M, Poujade A, Adès A 2002. Screening for domestic violence among patients admitted to a French emergency service. *European Journal of Psychiatry*. Vol. 17 479-83.	*Type of evidence:* Secondary research *Method*: Questionnaire	Patients seen in an emergency service must be identified as a population at risk for domestic violence and these situations can be identified only by a systematic assessment using a standardized questionnaire.	
(32) Gremillion HG and Kanof EP. 1996. Overcoming Barriers to Physician Involvement in Identifying and Referring Victims of Domestic Violence. *Annals of Emergency Medicine*. Vol. (27) 769-773.	Type of Evidence: Non-Research Methods: Expert opinion.	The paper was directed at reducing the barriers to physician involvement in cases of domestic violence. There are numerous barriers to the access for care for domestic violence victims. These barriers include: professional barriers, personal barriers and institutional and legal barriers.	Medical practitioners should familiarise themselves with these barriers and it should be addressed at all levels ranging from teaching intuitions to the personal capacity in professional practice.
(134) Mayer BW. 2003. Female Domestic Violence Victims: Perspectives on Emergency Care. *Nursing Science Quarterly*. Vol 13: 340	*Type of evidence:* primary research *Method:* survey	A voiced desire of the participants was for sincere interaction with a professional helper, and recognition of the victim's lack of knowledge regarding shelters or protective services.	When healthcare providers understand the context of domestic violence and victims' perceived needs, the ED will better serve female victims

Citations of Non-research Evidence	Evidence type	Findings
(68) DNA Project. 2011. *Ground-breaking New Program Developed*. http://dnaproject.co.za/blog/tag/crime-scene-preservation. [17 December]	*Type of Evidence:* Non-research: report on the DNA training course.	The central message in the DNA project incorporates six steps. These steps provide an important understanding in crime scene awareness and preservation which is aimed at emergency providers amongst others.
(9) Republic of South Africa. 1998. Domestic Violence Act 116 of 1998. *Government Gazette* No. 19537 Vol. (402) 2 December 2008.	*Type of Evidence:* Non-Research	The Act contains an important section (4-Application for protection order) which has relevancy to emergency care providers. DV definition is of relevance.
(37) Martin LJ and Jacobs T. 2003. Screening for Domestic Violence: A Policy And Management Framework For Health Sector. Institute of Criminology University of Cape Town, Rondebosch South Africa.	*Type of Evidence:* Non-research; Report	Domestic violence needs to be addressed as a public sector priority. Health services often represent the point of first and only contact for women with public sector services. Abused women often interact with the health care system for routine or emergency care thus placing health workers in a unique position to identify abuse and intervene.
(12) McCoy M. 1996. Domestic Violence: Clues to Victimization. *In Annals of Emergency Medicine*. Vol. (27) 764-765	*Type of Evidence:* Non-research, report	In mixed-gender domestic violence, the female is 13 times more likely to be injured and 30% more likely to be killed than the male. Clues to victimization are usually evident on history taking and/ or physical examination. Staff should be trained to screen and treat victims of domestic violence.
(97) IOL News. 1999. SA Domestic Violence Grim HIV. http://www.iol.co.za/news/south-africa/sa-domestic-violence-as-grim-as-hiv-1.7506 [17 December 2011]	*Type of Evidence:* Non-research; Newspaper article	Domestic violence and rape are globally responsible for a burden of disease comparable with other major health crises, including the HIV pandemic. Study of Violence and Reconciliation showed every six days a woman is killed by an abusive partner. Indirect findings: Violence against women is a major public health concern, with mental and physical health consequences for abused women and the children who witness such abuse.
(61) Vetten L. 2005. Addressing domestic violence in South Africa: Reflections on strategy and practice. *UN Division for the Advancement of Women in collaboration with: UN Office on Drugs and Crime*. 1-12	*Type of Evidence:* Non-research; Reflective report	1. Practices and strategies should be dynamic and responsive to changing circumstances and conditions, rather than seen as fixed. They are iterative and incremental and should emerge from a process of ongoing reflection, evaluation and adaptation. 2. Determine how women's perspectives and needs match those of the implementers. Good practices should prioritise marginalised women. 3. Human and material resources are required to effectively implement legislation. Feminist engagement with budgeting processes may be one means of ensuring that such resources exist. 4. Laws cannot function in isolation from the other essential social support required by abused women. Piecemeal and ad hoc changes designed to improve the implementation of legislation are ultimately limited if there is no larger framework guiding thinking around combatting and eradicating violence.
(76) IOL News. 2008. *Abused Women At Risk Of Pre-Term Birth*. http://www.iol.co.za/lifestyle/abused-women-at-risk-of-preterm-birth-1.623865 [14 December 2011]	*Type of Evidence:* Non-Research; Newspaper article	American College of Obstetrics and Gynaecology recommend the routine screening of pregnant women for abuse. *Indirect Findings:* pregnant women that are abused may be more likely to drink, smoke or use illegal drugs, which could raise the risk of premature birth
(81) IOL News. 1999. Domestic Violence Laws are Given Teeth. http://www.iol.co.za/news/south-africa/domestic-abuse-laws-are-given-teeth-1.23179 [17 December 2011]	*Type of Evidence:* Non-Research; Newspaper article	The Domestic Violence Act, designed as a lifeline to people in abusive relationships, has a much broader scope than the old Prevention of Family Violence Act which it replaces, and which applied only to "parties to a marriage". The elderly, gays and lesbians, children, parents, girlfriends and boyfriends will be protected by the new law. *Indirect findings:* the new legislation could be difficult to enforce.
(8) Davies K and Edwards L. 1999. Domestic Violence: A Challenge To Accident And Emergency	*Type of Evidence:*	Emergency room nurses are in no position to make decisions on behalf of patients with regards to their personal relationships (i.e. encourage victim to leave partner). Various considerations are listed which nurses should keep in mind

Nurses. In *Accident and Emergency Nursing*. Vol. (7) 26-30.	Non-Research; guidelines	when treating patients.
(100) IOL News. 2008. *Screening Of Abuse In ER Not A Danger*. http://www.iol.co.za/lifestyle/screening-for-abuse-in-er-not-a-danger-1.624045 [17 December 2011]	*Type of Evidence:* Non-Research; Newspaper article	*Direct findings:* Researchers found that a computerised system for screening ER patients for intimate-partner violence did not endanger victims either in the hospital or after they went home. More than one third of abuse victims said they had sought help based on the information they had received in the ER. *Indirect findings*: There are high rates of unrecognised abuse among ER patients, and centres should consider screening for it.
(88) IOL News. 2011. *Horrific Weekend of Domestic Violence*. http://www.iol.co.za/blogs/carmel-rickard-1.681228/horrific-weekend-of-domestic-violence-1.1185652 [17 December 2011]	*Type of Evidence:* Non-Research; Newspaper article	*A* UN fact sheet reported the results from a survey of 10 mostly developing countries. Among women aged 15-49, for example, between 17 percent and 70 percent reported violence by an intimate partner.

Annexure 4: EiDM Checklist (National Collaborating Centre for Methods and Tools)

☑	**EIDM Phases & Steps**	*Cross-reference*
☑	**1. Define question:** → ***Was a clear answerable search question developed?***	Literature Review (2.2)
	What was the question? P — Pre-hospital providers I — Role/scope of DC intervention? C — GBV prevention alternatives O — GBV Prevention	What is the role and scope of prehospital EC providers to DV intervention as a form of GBV prevention?
☑	**2. Search for relevant evidence** → ***Was a comprehensive search strategy employed to find the best available evidence to address this question?***	See 2.2.1.
	PICO search terms table *(See: Developing an Efficient Search Strategy Using PICO)* • Years searched: 1999-2011	Table 11
	Pyramid results *(See: Levels & Sources of Public Health Evidence)*	
	Search results *(See: Keeping Track of Search Results: A Flowchart)*	
	References saved in reference management software database *(Microsoft Word)*	(a) EBSCO Host (Health Source Consumer Edition, Health Source Nursing/Academic Edition and Medline), (b) PubMed, (c), Science Direct, (d) Google Scholar, (e) Google, (f) iol.co.za, (g) news24.com, (h) Sage Publications, (i) Cochrane Library, and (j) Medical Research Council.
	What relevance criteria were used to determine evidence for quality assessment: *Primary* — Titles and abstracts as found in reference management database • *Save as separate reference management database.* *Secondary* — Relevance assessment of full document versions • *Save as separate reference management database.*	
	How many papers remained following relevance assessment(s)?	164
☑	**3. Appraise** → ***Was quality assessment conducted on relevant evidence?***	Table 3, Annexure 2
	How many papers remained after quality assessment? *(See: Flowchart, above)*	53
☑	**4. Synthesize** → ***What were the results of the review of the evidence?***	Table 4, Annexure 3
	What were the actionable messages from the evidence?	See Literature review
☑	**5. Adapt.**	See Chapter 2
	• *NCCMT's Applicability and Transferability tool;* • *AHRQ's Will It Work Here? A Decision-maker's Guide to Adopting Innovations*	Considered
☑	**6. Implement.**	Test tools in a Cohort study
☑	**7. Evaluate.**	Phase II Results

Annexure 5: Distribution of EC providers by registration and by WC EMS

Table: Total Number of Active EC Registrations (As At 03-Oct-2016) by Province
(HPCSA, 2016)

	REGISTER CODES						
REGION	**ANA**	**ANT**	**BAA**	**ECP**	**ECT**	**OECO**	**Total**
EASTERN CAPE	817	89	4,209	20	30	25	**5,190**
FOREIGN	22	49	90	7	0	0	**168**
FREE STATE	577	78	5,931	18	106	51	**6,761**
GAUTENG	2,421	500	17,539	157	295	180	**21,092**
KWAZULU NATAL	1,860	313	8,293	116	82	44	**10,708**
LIMPOPO	699	44	8,583	7	50	31	**9,414**
MPUMALANGA	625	50	4,616	5	39	42	**5,377**
NORTH WEST	655	52	4,217	3	190	39	**5,156**
NORTHERN CAPE	325	18	1,349	0	42	37	**1,771**
WESTERN CAPE	1,569	393	3,710	135	248	62	**6,117**
Total	**9,570**	**1,586**	**58,537**	**468**	**1,082**	**511**	**71,754**

Annexure 6: WC EMS distribution of staff by race, gender & qualification

EMS OPERARATIONAL PERSONNEL AS AT 31 DECEMBER 2016

STATION	QUALIFICATION	AM	AF	CM	CF	IM	IF	WM	WF	TOTAL
PAARL	BAA	5	3	3	1	0	0	0	0	12
	AEA	1	1	10	6	0	0	0	3	21
	ECT	0	0	1	0	0	0	0	0	1
	PARAMEDIC	0	0	2	1	0	0	0	0	3
	TOTAL	**6**	**4**	**16**	**8**	**0**	**0**	**0**	**3**	**37**

STATION	QUALIFICATION	AM	AF	CM	CF	IM	IF	WM	WF	TOTAL
KHAYALITSHA	BAA	24	17	3	9	0	0	0	0	53
	AEA	25	23	12	5	3	0	0	0	68
	ECT	2	2	3	0	1	0	0	0	8
	PARAMEDIC	5	5	3	2	0	0	0	1	16
	TOTAL	**56**	**47**	**21**	**16**	**4**	**0**	**0**	**1**	**145**

STATION	QUALIFICATION	AM	AF	CM	CF	IM	IF	WM	WF	TOTAL
PINELANDS	BAA	37	29	15	6	0	0	0	0	87
	AEA	7	10	39	10	0	0	2	3	71
	ECT	2	2	7	4	1	0	1	2	19
	PARAMEDIC	1	3	8	6	0	0	4	3	25
	TOTAL	**47**	**44**	**69**	**26**	**1**	**0**	**7**	**8**	**202**

STATION	QUALIFICATION	AM	AF	CM	CF	IM	IF	WM	WF	TOTAL
CERES	BAA	1	4	6	2	0	0	0	0	13
	AEA	0	0	6	3	0	0	0	0	9
	ECT	0	0	3	1	0	0	0	0	4
	PARAMEDIC	0	0	2	0	0	0	0	0	2
	TOTAL	**1**	**4**	**17**	**6**	**0**	**0**	**0**	**0**	**28**

STATION	QUALIFICATION	AM	AF	CM	CF	IM	IF	WM	WF	TOTAL
WORCESTER	BAA	2	3	0	4	0	0	1	0	10
	AEA	0	0	11	1	0	0	0	2	14
	ECT	0	0	0	0	0	0	0	0	0
	PARAMEDIC	0	0	3	2	0	0	0	2	7
	TOTAL	**2**	**3**	**14**	**7**	**0**	**0**	**1**	**4**	**31**

DISTRICT	QUALIFICATION	AM	AF	CM	CF	IM	IF	WM	WF	TOTAL
CAPE WINELANDS DISTRICT (includes Ceres & Worcester staff numbers)	BAA	7	13	28	10	0	0	0	0	58
	AEA	1	1	32	8	0	0	1	3	46
	ECT	0	0	4	1	0	0	0	0	5
	PARAMEDIC	1	0	5	2	0	0	2	0	10
	TOTAL	**9**	**14**	**69**	**21**	**0**	**0**	**3**	**3**	**119**

DISTRICT	QUALIFICATION	AM	AF	CM	CF	IM	IF	WM	WF	TOTAL
METROPOLE DISTRICT (includes Paarl, Khayalitsha & Pinelands staff numbers)	BAA	109	88	34	27	0	0	0	1	259
	AEA	56	63	81	41	4	0	4	6	255
	ECT	16	8	21	9	3	0	3	1	61
	PARAMEDIC	9	11	26	16	0	0	5	7	74
	TOTAL	**190**	**170**	**162**	**93**	**7**	**0**	**12**	**15**	**649**

STATION	QUALIFICATION	AM	AF	CM	CF	IM	IF	WM	WF	TOTAL
WC PROVINCE	BAA	159	150	161	77	0	0	0	0	547
	AEA	79	87	280	92	4	0	19	22	583
	ECT	24	10	50	12	3	0	6	1	106
	PARAMEDIC	12	11	52	27	1	0	12	11	126
	TOTAL	**274**	**258**	**543**	**208**	**8**	**0**	**37**	**34**	**1362**

Annexure 7: Questionnaire: DV responsivity by Emergency Care Providers

This was developed in Microsoft Publisher and printed in A4.

QUESTIONNAIRE:

DOMESTIC VIOLENCE RESPONSIVITY BY EMERGENCY CARE PROVIDERS

PhD Candidate: Navindhra Naidoo

Supervisor: Professor Lillian Artz (UCT)

Co-supervisor: Professor Lorna Martin (UCT)

Cape Peninsula University of Technology
Department of Emergency Medical Sciences Faculty of Health and Wellness Sciences Private Bag X24,Bellville, 7535, Cape Town

E mail: naidoon@cput.ac.za

Dear Participant,

onsent to Participate in Research on GBV: Domestic Violence Responsivity Questionnaire

(Adapted from Naidoo, 2007; United Nations, 2005)

Study Title: GBV: Strengthening the role and scope of the Emergency Care discipline by promoting theory, policy and clinical praxis.

Thank you for volunteering to participate in a research study by Mr. Navindhra Naidoo. You may contact Mr. Naidoo at 021- 958 6534/ 082 3372647 at any time if you have questions about the research. You may also contact the Faculty of Health Sciences, Research Ethics Committee at the University of Cape Town if you have questions about your rights as a research subject.

Your participation in this research is voluntary, and you will not be penalized or lose benefits if you refuse to participate or decide to stop. If participation is during your work time, your organisation's management has been informed and the have consented to employee's participation. The participant information sheet, attached hereto, details the nature of the study and your participation. Counselling is available should you need such a service as a result of your participation. The Faculty of Health research ethics committees of UCT (Ref: 141/2012) and CPUT have approved the study as have the following organisations/departments for your participation: KZN DOH, WC DOH, WC COEC, KZN COEC, KZN EMRS Ethekweni, CPUT EMS and DUT EMC & R.

Sign below, before commencing. Mark the blocks with a cross (X) and provide explanations were requested.

Multiple selections for the same question is possible. Please answer sincerely. You will remain anonymous.

Acknowledgement/ Informed consent

I have read the information sheet for the study: GBV: Strengthening the role and scope of the Emergency Care discipline by promoting theory, policy and clinical praxis.

I understand what my involvement In the study means and I hereby voluntarily agree to participate.

Signature of Participant Date

Date :_____2013 Study Site/ Employer:

[redacted]

1. Indicate your gender.

Male	Female
1	2

2. Indicate your age group.

< 25	25-29	30-34	35-39	40-44	>/=45
1	2	3	4	5	6

3. Indicate all your qualifications.

BAA	AEA	CCA	NDip:	NCert :	BTech EMC	Other
1	2	3	4	5	6	7

Explain other qualifications:

_____

4. Where is your work mostly located?

Urban	Rural	Communication	Operations	Education	Managemen
1	2	3	4	5	6

5. Where did you complete your medical qualifications?

KZN	WC COEC	DUT EMC&R	CPUT EMS	UJ EMC	UCT	Other
1	2	3	4	5	6	7

6. What is the length of your EMS related experience?

0-1	2-5	6-10	11-15	16-20	>20
1	2	3	4	5	6

7. Indicate your race:_____

PART II: KNOWLEDGE AND EXPERIENCE OF DOMESTIC VIOLENCE

8. Provide a case definition of domestic violence:

_____

_____

_____

_____

_____

9. How many emergency calls, in general, were you dispatched to in the last month?

0-25	25-50	51-75	76-100	101-125	126-150
1	2	3	4	5	6

9. In your estimation, what was the percentage of these responses (above) in which you recognised the presence of domestic violence?

0-10%	10-20%	20-30%	30-40%	40-50%	50-60%	60-70%	70-80%
1	2	3	4	5	6	7	8

10. In the last year, how many domestic violence calls did you diagnose as domestic violence related calls?

0-10%	10-20%	20-30%	30-40%	40-50%	50-60%	60-70%	70-80%
1	2	3	4	5	6	7	8

11. **In your experience, *victims of domestic violence* are mostly...**

Men	Women	Children
1	2	3

12. **In your experience, *perpetrators of domestic violence* are mostly...**

Men	Women	Children
1	2	3

13. Do you agree with the following statements?

STATEMENT	YES	NO	SOMETIMES
Alcohol and drugs are the main cause of domestic violence.	1	2	3
Abused women can leave home whenever they want to.	1	2	3
Men who beat their wives are mentally ill and cannot control their violence.	1	2	3
Domestic violence is a private matter.	1	2	3
A woman who nags is asking to be abused.	1	2	3
Physical abuse is worse than emotional abuse.	1	2	3
Women who do not listen to their partners deserve to be abused.	1	2	3
Only poor, uneducated and mostly black/coloured women are abused.	1	2	3
Violence includes any controlling, abusive or fear-inducing act that threatens to harm the health, well-being or safety of a person.	1	2	3
Violence and love cannot exist together in one home.	1	2	3
Domestic abuse mostly includes violence against women.	1	2	3
Women who are abused enjoy it or are mentally ill.	1	2	3

(Adapted from Padayachee & Singh, 2010)

14. Do you think that there is under-reporting of domestic violence incidents to the Emergency Medical Services?

Yes	No	Uncertain
1	2	3

15. What are the reasons for under-reporting of domestic violence to the Emergency Medical Service?

No telephonic access	Reporting is not seen as a priority by the victim	The communications centre does not prioritise domestic	There is poor handling of domestic violence calls by	The victim is ashamed to call for help	The victim is afraid to call for help
1	2	3	4	5	6

Other reasons for under-reporting to the EMS are:

_____

_____

16. Is there any special handling of domestic violence calls in terms of education, call taking, dispatch and response in EMS?

Yes	No	Uncertain
1	2	3

If yes, explain:

_____

_____

_____

17. Are there any laws that empower emergency care personnel to support victims of domestic violence?

Yes	No	Uncertain
1	2	3

If yes, list them:

_____

_____

18. Is routine domestic violence identification important for emergency care providers?

Yes	No	Uncertain
1	2	3

Why?

_____

_____

19. As an emergency care practitioner, when or where would you detect domestic violence?

_____

_____

_____

20. Do you experience difficulty in diagnosing the history or presence of domestic violence in routine calls?

Yes	No	Never diagnose
1	2	3

If yes, do you experience difficulty because…

It is difficult to safeguar	You are un-comfortable to ask routinely	Victims of abuse are ashamed or afraid to admit	There is no point, as there is nothing you can do about	You do not want to get involved in a private
1	2	3	4	5

Other reasons are...:

_____

_____

21. Have you referred victims of abuse in the last year?

Always	Sometime	Not at all
1	2	3

22. To whom would you refer domestic violence victims?

Clinic or hospital	Police	Crisis Centre/ Non-governmental	Social worker/ Psychologist	Religious organisation	Uncertain of referral
1	2	3	4	5	6

Other referral choices:

23. Are you aware of any service provider that deals with domestic violence in your area of work?

Yes	No	Uncertain
1	2	3

24. If yes, what is the domestic service provider name, telephone number and address? Name:_____ Tel:_____

Address:_____

25. Do you have a referral resource book/centre to consult?

Yes	No
1	2

26. Did your EMS education prepare you for responding and dealing with domestic violence?

Not at all	Inadequate	Adequate preparation	Well prepared
1	2	3	4

27. Specify what particular domestic violence training you have had and by whom.

28. What, in your opinion, is the cause or causes of domestic violence?

29. What is your current treatment of domestic violence cases?

30. What is needed and possible in the treatment of domestic violence victims in EMS?

Current Practice with respect to	What is needed and possible in the EMS

31. Should EMS personnel detect and report violence in their daily practice? Why?

32. How can EMS be more responsive to domestic violence victims and survivors?

33. Define the term: "GBV."

34. Name physical and/or psychological effects of domestic violence on a survivor.

Child Survivor	Adult Survivor

35. How can you, as a health care provider, support survivors and provide safety in your current role in EMS.

PART III: SELF-PERCEPTION OF LEARNING AND EXPERIENCE

Please indicate with a cross (X) how strongly you agree/disagree with the following statements.

36. I feel confident I have an understanding of the emotional needs of survivors of domestic violence.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5	4	3	2	1

37. I feel confident I have the communication skills needed to work with women and children who have been victims of violence.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5	4	3	2	1

38. I know the minimum services that should be available for survivors of domestic violence.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5	4	3	2	1

39. I feel confident that I know how to refer a survivor to the appropriate services.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5	4	3	2	1

40. I feel confident that I know at least two self-care techniques to help prevent or address stress I may experience because of my work with survivors.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5	4	3	2	1

PART IV: YOUR VIEW ON EMERGENCY CARE PROVIDERS

In your experience, perception or reports from clients...

41. EMERGENCY CARE PROVIDERS feel confident and have the skills needed to create a safe environment for patients of domestic violence.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5	4	3	2	1

42. EMERGENCY CARE PROVIDERS feel confident and have a basic understanding of how to both medically and forensically examine a domestic violence patient.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5	4	3	2	1

43. EMERGENCY CARE PROVIDERS feel confident that they have a basic understanding of how to objectively document findings when a domestic violence patient is examined.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5	4	3	2	1

44. EMERGENCY CARE PROVIDERS feel confident and can counsel a woman who has been raped, about emergency contraception and provide her treatment if she consents to it.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5	4	3	2	1

45. EMERGENCY CARE PROVIDERS feel confident and can counsel patients who have been raped about presumptive treatment for sexually transmitted infections (including prophylaxis for HIV infection) and provide appropriate management when patients want it.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5	4	3	2	1

46. Medical staff should make conclusions and act responsibly based on their findings of abuse.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5	4	3	2	1

Multi-item Scales

Three multi-item scales were constructed out of sets of questions in the questionnaire. The 12 parts of question 13 were grouped into a single score between 0 and 24 representing the respondent's level of belief in myths about domestic violence. For each item in the scale, a respondent was given a '0' for giving the correct response, a '1' for answering 'Sometimes', and a '2' for giving the incorrect response (corresponding to belief in that particular myth). Most of the 12 items were worded so that 'Yes' was the wrong response, but three were worded so that 'No' was the wrong response.

The second multi-item scale is based on questions 36-40 and measures an EMS worker's self-efficacy for dealing with DV cases. Each item was scored from 0 to 4, with '4' corresponding to 'Strongly Agree' (the most desirable response indicating high self-efficacy) and '0' corresponding 'Strongly Disagree' (the least desirable response indicating low self-efficacy). Thus each respondent had an overall score between 0 and 20.

The third multi-item scale is based on questions 41-45 and measures an EMS worker's perception of the medical capacity for dealing with DV cases. The scoring system was identical to that of the EMS worker self-efficacy scale. A statistic that is commonly used for measuring the reliability of a multi-item scale is Cronbach's Alpha.

The formula for this statistic is (Cronbach, 1951):

$$\alpha = \frac{K}{K-1}\left(1 - \frac{\sum_{i=1}^{K}\sigma_{Y_i}^2}{\sigma_X^2}\right)$$

where K is the number of items in the scale, σ_X^2 is the variance of the total scores, and $\sigma_{Y_i}^2$ is the variance of all responses to item i. The values of this statistic range from 0 to 1. There is no consensus on the minimum acceptable value of α, with some regarding 0.7 as the threshold for internal consistency reliability and others accepting 0.5 (Ebrahim & Bowling, 2005, p. 397). The Cronbach's alpha score for the Domestic Violence Myth Index was 0.359, which is well below the minimum acceptable value, despite a larger sample than the pilot data. This implies that the currently constructed scale cannot serve as an internally consistent measurement of an EMS worker's level of belief in myths about DV. The Cronbach's alpha statistics for the EMS Worker Self-Efficacy Scale and the Perceptions of Medical Capacity Scale were 0.825 and 0.907, respectively. This indicates that these two scales do provide internally consistent measurements of the quantities they seek to measure.

Multiple Linear Regression Model

A multiple linear regression model was developed to allow for multivariate analysis of the relationship between the dependent variable (self-efficacy index) and independent variables (sex, age, site, race, experience, and qualifications). In the end only two of these (race and experience) were statistically significant for inclusion in the model. The model is expressed as follows:

$$Y = \beta_0 + \beta_1 D_1 + \beta_2 D_2 + \beta_3 D_3 + \beta_4 D_4 + \beta_5 D_5 + \beta_6 D_6 + \beta_7 D_7 + \beta_8 D_8 + \varepsilon$$

Here, Y is the dependent variable (self-efficacy index). β_0 is the intercept and the other β's are the partial slope coefficients.

The D's are dummy variables defined as follows:

$$D_1 = \begin{cases} 1 & \text{if race is Coloured} \\ 0 & \text{otherwise} \end{cases} \qquad D_2 = \begin{cases} 1 & \text{if race is Indian} \\ 0 & \text{otherwise} \end{cases}$$

$$D_3 = \begin{cases} 1 & \text{if race is White} \\ 0 & \text{otherwise} \end{cases} \qquad D_4 = \begin{cases} 1 & \text{if experience is 2 - 5 years} \\ 0 & \text{otherwise} \end{cases}$$

$$D_5 = \begin{cases} 1 & \text{if experience is 6 - 10 years} \\ 0 & \text{otherwise} \end{cases} \qquad D_6 = \begin{cases} 1 & \text{if experience is 11 - 15 years} \\ 0 & \text{otherwise} \end{cases}$$

$$D_7 = \begin{cases} 1 & \text{if experience is 16 - 20 years} \\ 0 & \text{otherwise} \end{cases} \qquad D_8 = \begin{cases} 1 & \text{if experience is} > 20 \text{ years} \\ 0 & \text{otherwise} \end{cases}$$

ε is the error term of the model, assumed to be independent and normally distributed with zero mean and constant variance. Note that no dummy variable is defined for the race 'African' or for the experience level '0-1 years' because these are the base categories.

Myth index score as dependent variable

A multiple linear regression model was fit to the data with myth index scores as the dependent variable and the various demographic factors (sex, age, race, experience, qualifications) as independent variables. This allows us to estimate the effects of these factors on myth index score *simultaneously.* Model selection was conducted using the stepwise selection method and the final model included the independent variables of sex, race, and the presence or absence of four qualifications: BAA, AEA, NDip EMC and BTech EMC. The results are as follows: (Recall that a higher myth index score means the person tends to believe more myths about DV.)

The results imply firstly that males have higher myth index scores than females. They also suggest that Coloureds have lower myth index scores than Africans (the difference between self-identifying Indians, Whites and Africans is not statistically significant). Among qualifications, those with a BTech EMC qualification tend to have lower myth index scores than those without. The differences pertaining to other qualifications were not statistically significant. These results are broadly in agreement with what we found in the ANOVA looking at variables individually. A large proportion, n = 277 (80,29%), believed alcohol and drugs to be causative of DV.

Table: Effects of demographic factors on myth index score

```
Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)   7.0216     0.5593  12.553   <2e-16 ***
Male          0.9016     0.3675   2.453   0.0149 *
Coloured     -0.9125     0.3963  -2.303   0.0222 *
Indian       -2.4958     1.3881  -1.798   0.0735 .
White        -1.4995     0.7722  -1.942   0.0534 .
BAA           0.9013     0.5193   1.736   0.0840 .
AEA          -0.5690     0.3802  -1.497   0.1359
NDip EMC      1.9084     0.9784   1.951   0.0524 .
BTech EMC    -2.6176     1.1674  -2.242   0.0259 *
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 2.656 on 222 degrees of freedom
Multiple R-squared:  0.1171,    Adjusted R-squared:  0.08529
F-statistic: 3.681 on 8 and 222 DF,  p-value: 0.0004706
```

Self-efficacy score as dependent variable

Another multiple linear regression model was fit to the data, this time with self-efficacy scores as the dependent variable and the various demographic factors (sex, age, race, experience, qualifications) as independent variables. Model selection was again conducted using the stepwise selection method and the final model included the independent variables of age, race, experience and the presence or absence of two qualifications: BAA and AEA. The results are as follows:

The results imply firstly that those in the three highest age categories (35-39, 40-44, 45+) and the 25-29 age category have higher self-efficacy index scores than those in the lowest age category (<25). The differences between the 30-34 age group and the <25 age group were not statistically significant. Compared to the African race group, those who self-identified as Coloured or White had lower self-efficacy scores (the difference between African and Indian was not statistically significant). Compared to those with 0-1 years' experience, those with 11-15 years' experience have lower self-efficacy scores (other experience levels were not significantly different from the 0-1 years' experience group). Having a BAA qualification was associated with a higher self-efficacy score, while having an AEA qualification was associated with a lower self-efficacy score. Again, these results are in line with those of the ANOVA models.

Table: Age, race, experience and presence/absence of BAA and AEA

```
Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  11.7668     1.4011   8.398 6.14e-15 ***
Age 25-29     2.7982     1.3376   2.092 0.037625 *
Age 30-34     1.2409     1.3451   0.922 0.357305
Age 35-39     4.1718     1.3496   3.091 0.002257 **
Age 40-44     3.9764     1.4477   2.747 0.006529 **
Age >=45      3.7599     1.4845   2.533 0.012029 *
Coloured     -1.8543     0.5737  -3.232 0.001423 **
Indian       -1.1596     1.9035  -0.609 0.543041
White        -2.9997     1.0737  -2.794 0.005678 **
Exper 2-5    -1.9023     1.0431  -1.824 0.069593 .
Exper 6-10   -2.0607     1.0806  -1.907 0.057864 .
Exper 11-15  -4.1914     1.2001  -3.492 0.000581 ***
Exper 16-20  -1.5532     1.3574  -1.144 0.253785
Exper >20     0.4690     1.3546   0.346 0.729523
BAA           2.3284     0.6873   3.388 0.000838 ***
AEA          -1.8080     0.5253  -3.442 0.000693 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 3.501 on 215 degrees of freedom
Multiple R-squared:  0.321,     Adjusted R-squared:  0.2737
F-statistic: 6.778 on 15 and 215 DF,  p-value: 6.33e-12
```

Perceptions of Medical Capacity Index as dependent variable

A third multiple linear regression model was fit to the data, now with perceptions of medical capacity scores as the dependent variable and the various demographic factors (sex, age, race, experience, qualifications) as independent variables. Model selection was once again conducted using the stepwise selection method and the final model included only the independent variables of race and the presence or absence of two qualifications: AEA and BTech EMC. The results are as follows:

The results indicate that respondents identifying as Coloured, Indian or White have a lower perceptions of medical capacity score than those identifying as African. Secondly, those with a BTech in EMC qualification had a lower perceptions of medical capacity score than those without it (the difference between those with and without the AEA qualification was not statistically significant). Again, these results are in line with those of the ANOVA models.

Table: Perceptions of medical capacity scores and demographic factors

```
Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  13.2298     0.4984  26.542  < 2e-16 ***
Coloured     -3.8421     0.6718  -5.719 3.38e-08 ***
Indian       -5.4976     2.4512  -2.243  0.02588 *
White        -5.9911     1.3615  -4.400 1.67e-05 ***
AEA          -1.0460     0.6552  -1.596  0.11178
BTech EMC    -4.9288     1.8497  -2.665  0.00827 **
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 4.728 on 225 degrees of freedom
Multiple R-squared:  0.2264,    Adjusted R-squared:  0.2092
F-statistic: 13.17 on 5 and 225 DF,  p-value: 2.955e-11
```

Annexure 9: Monte Carlo Simulation (post facto) results for Sampling Validity.

Subsequent to the historical data collection process described, a *post facto* Monte Carlo simulation was repeated using the actual parameters to show validity. Retrospective EMS cases were considered for five districts: Pinelands, Khayelitsha, Paarl, Worcester and Tulbach-Ceres. The data spanned the period from 22 July to 14 October 2015, comprising 85 days and 170 shifts. Across all districts, the total number of cases per shift was typically between 200 and 300. However, some of the cases from each shift had to be excluded since they did not meet the eligibility criteria (the patient should be female and at least 14 years of age). Since the research assistants' labour hours available were insufficient to capture data for all shifts, it was decided to use one-stage cluster random sampling. This may be described as follows: Denoting each shift as a cluster, we have a total population of N=170 clusters. Within the ith cluster we have M_i observation units (emergency cases). Because we are using one-stage cluster random sampling, we draw a random sample of n clusters and observe *all* M_i observation units within each of these clusters.

The total number of observation units in the population is $K = \sum_{i=1}^{N} M_i$.

The sample size chosen was n=30 clusters with statistical justification. Preliminary calculations were performed beforehand in order to settle on this choice of sample size; the calculations shown here were performed retrospectively since the sample data itself allowed for more specific information about the sizes of clusters.

The complexity of obtaining the probability distributions of proportion estimates from one-stage cluster random sampling led to the decision to estimate the standard errors of proportion estimates using Monte Carlo simulations. The power of a hypothesis test for proportion using Monte Carlo simulations; this was also performed to validate the statistical approach.

The M_i values remain unknown apart from the 30 clusters sampled because the boxes containing case reports (PRFs) were not counted or sorted into eligible and ineligible cases for the shifts that were not sampled. Among the 30 shifts ultimately sampled, 46,45% of cases were eligible. The Western Cape Department of Health provided information on the total number of cases for the chosen districts across the study period which was 56000. Applying the estimated eligibility rate, approximately 26012 eligible cases across the 170 shifts is arrived at. Dividing 26012/170, the average number of eligible cases per cluster works out to 153,0118. The average number of eligible cases in the 30 sampled clusters was 122,2667; which is somewhat lower; but the higher figure was used in sample size determination calculations to be more conservative. Based on the 30 sampled clusters, the standard deviation of number of cases per shift was 26.84429. Hence, for purposes of the simulations, the M_i values were randomly generated from a normal distribution with a mean of 153.0118 and a standard deviation of 26.84429.

Next, a population of "data" was generated, consisting of 1's and 0's with the key quantity of interest to detect the rate of DV in emergency cases. A rate or proportion varies between 0 and 1 and the standard error for estimating a proportion follows a

parabolic curve which is maximized when the proportion is 0,5 and minimized when the proportion is 0 or 1. Hence, the most conservative approach to sample size determination for estimating a proportion would assume the "worst case scenario" in which the population proportion is 0,5. However, this would be far too conservative for the present case. Since the objective is to use a hypothesis test to determine whether the retrospective DV detection rate differs from the prospective rate (which we estimate at about 1,54% using other methods), it was decided to use a default proportion of 0,015 "1's" in the simulated population.

Given the 170 clusters of random size with observations randomly allocated as "1's" (1, 5%) and "0's" (98,5%), the Monte Carlo algorithm repeatedly simulates drawing a cluster random sample of size n from the population and using it to obtain a sample estimate of the proportion of interest. The simulation is performed S times (S = 10 million for the purpose of this study), and across the S simulations the standard deviation of the sample proportion estimates was calculated. This standard deviation is the empirical estimate of the standard error of the proportion estimator for sample size n. The simulation is then repeated for different choices of n, with n=10, 20, 30… 100 being used. Figure 43 shows how the standard error decreased as the number of clusters sampled increased. An "elbow" in the graph around n = 30 was observed, which shows that the rate of return on precision per unit of sample size begins to decline around this point. The estimated standard error for estimating a proportion whose true value is 0,015 using 30 clusters is 0,00175. This means that a 95% confidence interval for such a proportion estimate has a half-width of about ±0.00343.

A second approach is to use the notion of statistical power. Suppose the null hypothesis p=p0 against the alternative p≠p0 is to be tested. If the true population proportion is p0+η, where η is referred to as the "effect size," what is the power, i.e. the probability of rejecting the null hypothesis, for a given sample size? Again, Monte Carlo simulations were used to obtain an empirical power estimate for n=10, 20, 30… 100. The power will depend, both on the null value p0 and on the effect size η, so it is best to hold these fixed. A rule of thumb in quantitative research is to use a sample size sufficient to ensure 80% power for a suitable choice of effect size. Since this study analyses small proportions, it is required that the data be sensitive to a small effect size. Hence, p0=0,015 is used as before however an effect size of 0,005 is adopted (Figure 44).

This means that if the proportion of cases in which DV is detected drops from 1, 5% to 1% or increases from 1,5% to 2%, the sample should provide an 80% chance of identifying this change through a hypothesis test.

As illustrated in **Figure 44**, the power increases rapidly with sample size, and 80% power is achieved at a sample size of 30 clusters. The exact estimate of power at this sample size is 0,861, compared with 0,651 at a sample size of 20 and 0,964 at a sample size of 40. Note that the standard error and power estimates themselves have

a Monte Carlo standard error of at most 0.000158 (calculated as $\sqrt{\frac{1}{4(10000000)}}$), indicating the accuracy of the Monte Carlo results up to the third decimal place at least.

Figure 43: Sample Size versus (Monte Carlo) Empirical Standard Error Estimate

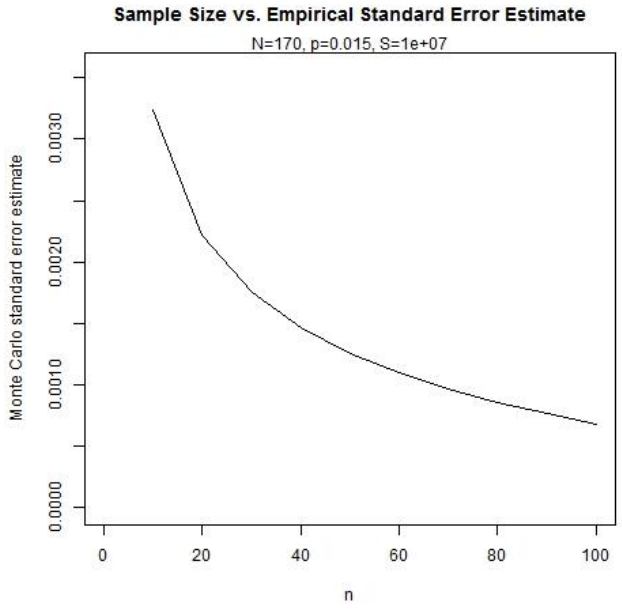
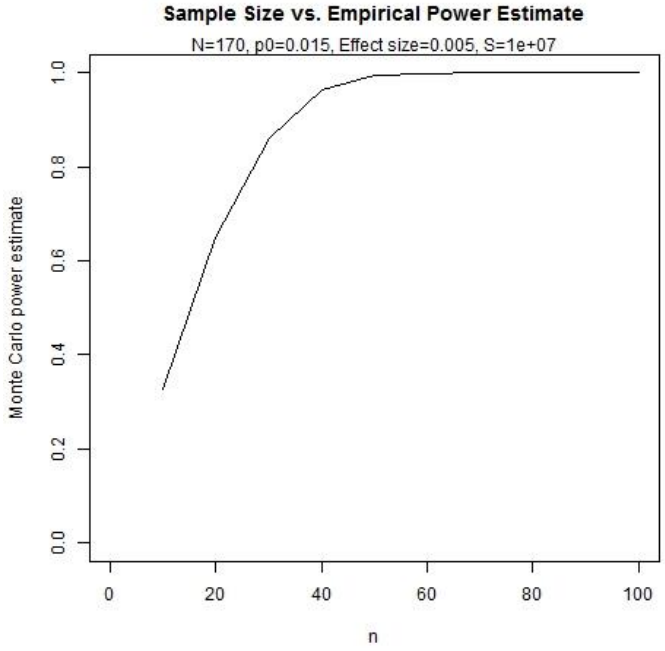
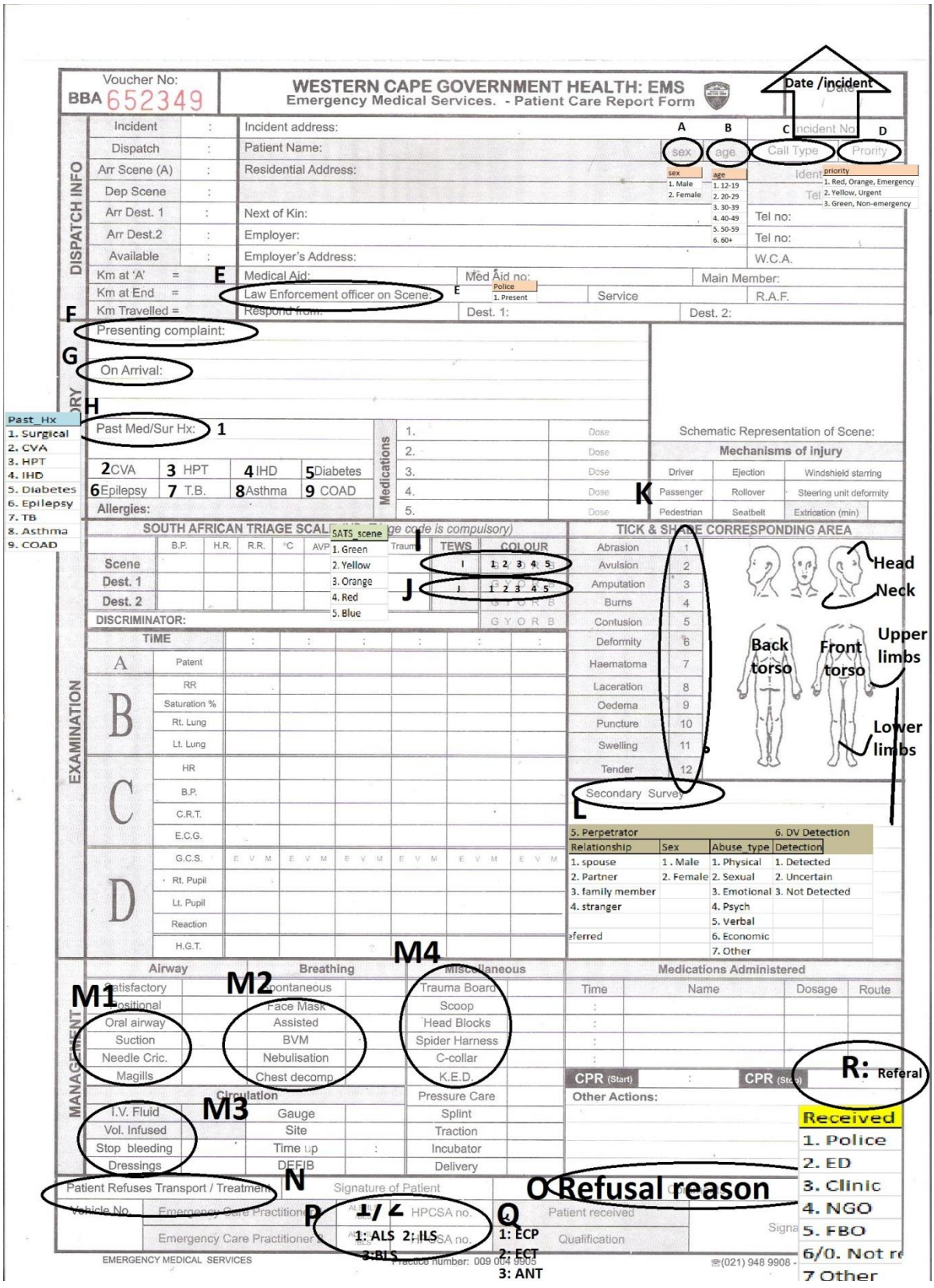


Figure 44: Sample Size versus Empirical Power Estimate



Annexure 10: WCG EMS Patient Care Report Form (PRF) and Data Collection Fields



Annexure 11: DV Routine Screening Implementation in EMS form

Participant No.:	
Dispatch Case No.:	
Date:	**2016**

Domestic Violence Routine Screening Implementation *in EMS*

A study in part fulfilment of the degree: PhD Forensic Medicine (UCT)

Principal Investigator: N Naidoo

E-mail: naidoon@cput.ac.za/

Tel: 082 337 2647/ 021 9538404

UCT Research Ethics Committee

Approval Reference 141/2012

Supervised by Prof Lillian Artz

(Director: Gender, Health, Justice, Research Unit, UCT)

& Prof Lorna Martin *(Head: Forensic Medicine UCT)*

Supported by:

Cape Peninsula University of Technology

Western Cape Government Health

Partially Funded by CPUT Teaching and Development Grant. Approved site WCG: EMS

A. **Demographic information:** Tick ✓ all the categories that apply to the 3 groups below

1. Practitioner					2. Patient						3. Alleged Perpetrator					
✓Age				years	✓Age					years	✓Age					years
20-29	30-39	40-49	50-59	60+	12-19	20-29	30-39	40-49	50-59	60+	12-19	20-29	30-39	40-49	50-59	60+
1	2	3	4	5	1	2	3	4	5	6	1	2	3	4	5	6
✓Race					✓Race						✓Race					
Black African	Indian	Coloured	White		Black African	Indian	Coloured	White			Black African	Indian	Coloured	White		
1	2	3	4		1	2	3	4			1	2	3	4		
✓Gender					✓Gender						✓Gender					
Male		Female			Male		Female				Male		Female			
1		2			1		2				1		2			

Tick ✓ all your qualifications		✓Chief complaint (presenting)				Type of abuse (can ✓more than 1)	
ECP	1	1 MVA	1	14 Other trauma	7	Physical	1
ECT	2	2 Assault	2	15 Gynae-cology	8	Sexual	2
NDip EMC	3	3 Burns	3	19 Asthma	9	Emotional	3
CCA	4	5 Shooting	4	21-22 Cardiac	10	Psychological (Including: Intimidation, harassment or stalking)	4
AEA	5	7 Rape	5	23 Over-dose	11	Verbal	5
BAA	6	12 Domestic Accidents	6	25 Infectious Disease	12	Economic	6
Specify Other	7	Specify Other	13			Specify Other	7

✓EMS experience in years		✓Frequency of EMS use (in general/ for any complaint)		✓Frequency of Abuse (if applicable)	
1-5	1	Almost daily	1	Almost daily	1
6-10	2	At least once a week	2	At least once a week	2
11-15	3	At least once a month	3	At least once a month	3
16-20	4	Every 2-3 months	4	Every 2-3 months	4
21-25	5	2-3 times a year	5	2-3 times a year	5
26-30	6	Once a year	6	Once a year	6
31-35	7	First time	7	First time	7

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✓EMS location		✓Patient History (Can ✓more than 1)							
Urban (City)	1	Previous domestic violence injury needing health care	1				Has a chronic medical condition (e.g. asthma)	4
Peri-urban (Stellenbosch/Paarl/Atlantis)	2	Previous domestic violence injury not reported to EMS	2				Believes EMS should screen for DV	5
Rural (Winelands)	3	Previous domestic violence Protection Order obtained	3				Would like telephonic advice on rights and services	6
Specify if inter-facility transfer		Period/length of abuse in years					Specify Other (e.g. Pregnancy)	
4		<2	2-5	5-10	10-15	>15	12	
		7	8	9	10	11		

B. Domestic Violence Screening: Choose 1, 2 or 3 and tick ✓ all the categories that are applicable

Direct questioning	1	Indirect questioning	2

1. DV DETECTED		2. UNCERTAIN		3. DV NOT DETECTED	
Patient discloses abuse		Patient does not disclose abuse but you suspect the presence/history of abuse		The patient does not disclose abuse and you have no suspicion of abuse	
New admission of abuse to health care	1				
Provided information	2	Provided information	1	Provide information	1
Supported patient	3	Discharged on scene	2	Discharged on scene	2
Documented observations and took a history	4	Treated presenting pathology	3	Treated presenting pathology	3
Informed patient of rights in relation to the DV Act	5	Referred to hospital with a handover of uncertainty	4	Referred to hospital having excluded DV presence	4
Protected chain of evidence	6	Specify other:	5	Specify other:	5

C. Conduct a Safety assessment: If Domestic violence is detected (1 above) or if you are uncertain (2 above), tick✓ YES, NO **or** UNCERTAIN for each of the 6 questions below.

SAFETY ASSESSMENT	YES	NO	Uncertain
1. Has the violence increased?	1	2	3
2. Does the perpetrator use alcohol and drugs?	1	2	3
3. Has the perpetrator threatened to kill her/ him?	1	2	3
4. Does the perpetrator have access to weapons?	1	2	3
5. Is the patient afraid to go home?	1	2	3
6. Has the patient/perpetrator thought about killing herself/ himself?	1	2	3

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Explain_____

_____

_____

_____

_____

D. Where did you refer the patient? : Tick ✓all the categories that are applicable.

Police	Hospital ED	Clinic	Non-governmental Organisation	Faith based organisation	Not referred, discharged on scene	Other
1	2	3	4	5	6	7

Explain (say to whom you handed over)

_____

_____

_____

_____

E. To what extent did the training prepare you for screening of this case? Tick✓

Not at all	Not sure	Somewhat	Mostly	Extremely well
1	2	3	4	5

Explain_____

_____

_____

_____

F. What aspect of the screening was challenging for you?

Tick ✓ all the categories that you found challenging during screening.

Asking directly	Asking indirectly	Documenting the case	Supporting victims	Conducting a Safety assessment	Victim Referral
1	2	3	4	5	6

Explain_____

_____

_____

_____

G. Please make any other relevant comment?

_____

_____

_____

_____

_____

End. Thank you for completing the screening Instrument.

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UNIVERSITY OF CAPE TOWN

Faculty of Health Sciences
Human Research Ethics Committee
Room E52-24 Groote Schuur Hospital Old Main Building
Observatory 7925
Telephone [021] 406 6338 • Facsimile [021] 406 6411
e-mail: shuretta.thomas@uct.ac.za

4 September 2012

HREC REF: 141/2012

Mr N Naidoo
c/o A/Prof L Artz
CPUT
EMS
Private Bag x24
Bellville
7535

Dear Mr Naidoo

PROJECT TITLE: GENDER-BASED VIOLENCE INTERVENTION: STRENGTHENING THE ROLE AND SCOPE OF THE EMERGENCY CARE DISCIPLINE BY PROMOTING THEORY, POLICY AND CLINICAL PRAXIS

Thank you for responding to the issues raised by the Faculty of Health Sciences Human Research Ethics Committee in your letter dated 3rd September 2012.

It is a pleasure to inform you that the HREC has **formally approved** the above-mentioned study.

Approval is granted for one year till the 15th September 2013

Please submit a progress form, using the standardised Annual Report Form if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period.
(Forms can be found on our website: www.health.uct.ac.za/research/humanethics/forms)

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Please quote the HREC. REF in all your correspondence.

Yours sincerely

Signed

PROFESSOR M BLOCKMAN
CHAIRPERSON, FHS HUMAN ETHICS
Federal Wide Assurance Number: FWA00001637.

Institutional Review Board (IRB) number: IRB00001938

s.thomas

HREC office use only (FWA00001637; IRB00001938) This serves as notification of annual approval, including any documentation described below.			
☑ Approved	Annual progress report	Approved until/next renewal date	30 SEPT 2014
☐ Not approved	See attached comments		
Signature Chairperson of the HREC	Signed	Date Signed	30/9/2013

Comments to PI from the HREC

27 SEP 2013

1. Protocol information

Date form submitted	27 September 2013		
HREC REF Number	141/2012	Current Ethics Approval was granted until	15 September 2013
Protocol title	***Gender-based Violence: Strengthening the role and scope of the Emergency Care discipline by promoting theory, policy and clinical praxis.***		
Protocol number (if applicable)	n/a		
Are there any sub-studies linked to this study?	☐ Yes ☒ No		
If yes, could you please provide the HREC Ref's for all sub-studies? **Note:** A separate FHS016 must be submitted for each sub-study. n/a			
Principal Investigator	Mr. Navindhra Naidoo		
Department / Office Internal Mail Address	Cape Peninsula University of Technology, Emergency Medical Sciences, Box 1906, Bellville, 7535 (naidoon@cput.ac.za)/ Forensic Pathology: Prof Lorna Martin		

1.1 Does this protocol receive US Federal funding?	☐ Yes	☒ No
1.2 If the study receives US Federal Funding, does the annual report require full committee approval?	☐ Yes	☒ No

(Note: Please complete the Closure form (FHS010) if the study is completed within the approval period)

UNIVERSITY OF CAPE TOWN

FACULTY OF HEALTH SCIENCES
Human Research Ethics Committee

FHS016: Annual Progress Report / Renewal

HREC office use only (FWA00001637; IRB0000193B) This serves as notification of annual approval, including any documentation described below.			
☑ Approved	Annual progress report	Approved until/next renewal date	30/06/2017
☐ Not approved	See attached comments		
Signature Chairperson of the HREC	Signed	Date Signed	14/6/2016

Comments to PI from the HREC

RESEARCH ETHICS COMMITTEE
2016 -06- 15
HEALTH SCIENCES FACULTY
UNIVERSITY OF CAPE TOWN

Principal Investigator to complete the following:

1. Protocol information

Date (when submitting this form)	15 June 2016		
HREC REF Number	141/2012	Current Ethics Approval was granted until	30/09/2014
Protocol title	Gender-based Violence: Strengthening the role and scope of the Emergency Care discipline by promoting theory, policy and clinical praxis.		
Protocol number (if applicable)	n/a		
Are there any sub-studies linked to this study?	☐ Yes ✓ No		
If yes, could you please provide the HREC Ref's for all sub-studies? **Note:** A separate FHS016 must be submitted for each sub-study.	n/a		
Principal Investigator	Mr Navindhra Naidoo (NDip AEC, BTech EMC, HD Ed, MPH)		
Department / Office Internal Mail Address	N/a (The PI is not on campus)		

1.1 Does this protocol receive US Federal funding?	☐ Yes	✓ No
1.2 If the study receives US Federal Funding, does the annual report require full committee approval?	☐ Yes	☐ No
1.3 Has sponsorship of this study changed? If yes, please attach a revised summary of the budget.	☐ Yes	✓ No

Annexure 13: Letter seeking authorization from participating Institutions

Room D12, Education Building, CPUT,
Private Bag X24, Bellville,
01 August 2012

Mr. Raveen Naidoo (Chair: Professional Board: Emergency Care)
Professor Lee Wallis (Chief Director: PGWC: Emergency Medicine)
Mr. Kuben Moodley (Principal: College of Emergency Care, PGWC- EMS)
Mr. Sagie Naguran (HOD: Emergency Medical Care and Rescue, DUT)
Mr. Lloyd Christopher (HOD: Emergency Medical Sciences, CPUT)
Mr. Sithole (Director, Emergency Medical Rescue Service, KZN)
Mrs. Seemole Mfeka (Principal: College of Emergency Care, KZN- EMRS)

Dear Prof/Sir/ Madam

Re: REQUEST FOR AUTHORITY TO CONDUCT RESEARCH IN YOUR (ACCREDITED) INSTITUTION

In part fulfilment of a PhD in Forensic Pathology (UCT), I am conducting research entitled: *GBV: Strengthening the role and scope of the Emergency Care discipline by promoting theory, policy and clinical praxis*. I kindly request authority from your office to conduct the above research amongst purposively selected EMS personnel in your institution, using a Questionnaire, Observational Research and FGDs (See attached Table).

Preventing violence against women is a National Government prerogative, and therefore also an area of work for the HPCSA, Provincial Departments of Health and Health Faculties. ECP's are often first responders to primary or secondary DV calls. Our response in this regard may be deserving of reflection. The study aims to understand current practice of DV intervention and to inform clinical and system needs. This study asks for responses or observations regarding your organisation's and/or personnel's experience in this regard. Should any participant experience any discomfort or risk, a counselling intervention is available. All data will be treated as confidential and anonymous. Observational research and FGDs will also be used. All participation is voluntary and consent is informed. The data (particularly the questionnaires) may be collected during work hours, if the participants selected are on

duty. At no time will service delivery be compromised as data will only be collected at a time agreed to by the operational managers.

Please note that submission has been made to the University of Cape Town, Faculty of Health Sciences, and Research Ethics Committee. You are welcome to contact me for more detail or for more questions. Should you have any ethical concerns about the proposed study, you may also contact the Research Ethics Committee.

Please find attached a summarized version of the proposed study. Thank you for considering this request.

Yours faithfully

.....

Mr. Navindhra Naidoo (B Tech EMC, HDE, MPH)

PhD: Forensic Pathology Candidate (UCT) [Student Number: NDXNAV014]

Emergency Care Practitioner (HPCSA: ECP 0000 116)

Senior Lecturer: Emergency Medical Sciences, Cape Peninsula University of Technology

Contact Details:

Mr. Navindhra Naidoo, CPUT: EMS, Room D12, Education Building, Private Bag X24, Bellville, 7535, Telephone: 021 959 6534/ 082 3372647

E-mail: naidoon@cput.ac.za

Alternately: Faculty of Health Sciences, Research Ethics Committee, Room E52-24, Groote Schuur Hospital, Old Main Building, Observatory, 7925, Telephone: 021 4066338, Fax: 021 4066411

E-mail: sumayah.arafdien@uct.ac.za

How: Research Method	Where: Sites for data collection	Who/ How many: Inclusion
Survey **(90-150)**	**Largest HPCSA accredited training sites in Kwa-Zulu Natal (KZN) and the Western Cape(WC):** • -CPUT- Dept. of Emergency Medical Science, Board room, Bellville Campus, Cape Town • -Durban University of Technology-Dept. of Emergency Medical Care & Rescue, Board room, Ritson Road, Durban • -Kwa-Zulu Natal (KZN) College of Emergency Care, Board room, Northdale Campus, Pietermaritzberg • -Western Cape (WC) College of Emergency Care, Board room, Tygerberg Campus, Cape Town **Provincial Dept. of Health Emergency Medical Services (EMS):** • -KZN EMS, Operational Bases in Durban Metro • -WC EMS, Operational Bases in Cape Town Metro	• HPCSA accredited Educators in the Emergency Care Programmes in the Provincial EMS and Universities of Technology in KZN and the WC (30-50 combined), • HPCSA registered Provincial Operational Emergency Care Providers in KZN (30-50) and WC (30-50).
Observational Research **(24-36)**	**Simulation Observations** CPUT- Dept. of Emergency Medical Science Skills laboratory, Durban University of Technology- Dept. of Emergency Medical Care & Rescue skills laboratory, KZN College of Emergency Care practical rooms, WC College of Emergency Care practical rooms **Non-simulation, Practice Observations** • KZN Provincial Emergency Medical Services (EMS) Metropole • WC Provincial Emergency Medical Services (EMS) Metropole	• **Simulation Observations** 2-3 violence related simulations and 2-3 non-violence/ medical simulations in each of the 4 academic sites. (Total: 16-24 observations) **Non-simulation, Practice Observations** • 2-3 violence related cases and 2-3 non-violence/ medical cases in each of the 2 Provincial operational sites. (Total: 8-12 observations)
Focus Groups (6-8, with 6-8 participants)	• -CPUT- Dept. of Emergency Medical Science, Board room • -Durban University of Technology-Dept. of Emergency Medical Care & Rescue, Board room • -Kwa-Zulu Natal (KZN) College of Emergency Care, Board room • -Western Cape (WC) College of	Six to eight FGDs (of 6-8 participants each) will be held (at least 1 for each of the 6 sites, with the option of 2 additional focus groups). Participants will be Emergency Care clinicians (advanced-basic), operational managers, academics and

	Emergency Care, Board room	Emergency Care scholars.
Interviews **(3-4)**	The individual interviews will be with the HPCSA (Professional Board for Emergency Care) Chairperson of the Education Committee, the Chairperson of the PBEC, Participant 2, and/or the HPCSA General Manager. Interviews will take place at the convenience of the interviewee at a conference venue, conducive to voice recording and privacy.	Total Number of individual interviews of power brokers/ regulators:3-4

Annexure 14: HPCSA consent to access PBEC Documents

Navindhra Naidoo

Sent Items

Saturday, August 22, 2015 7:08 AM

Dear Mrs Pieters

The PBEC and Council recently approved the Domestic Violence Screening Protocol. In the run up to this approval 3 legal opinions were sought. I kindly request your permission to reflect on these opinions in my PhD thesis as it relates to domestic violence medical jurisprudence. As you are aware, I am concluding PhD in Forensic Medicine (UCT) entitled: ***Gender-based Violence:Strengthening the role and scope of the Emergency Care discipline by promoting theory, policy and clinical praxis.*** Supervisors are Prof Lillian Artz (Gender Health and Justice Research Unit, University of Cape Town) and Prof Lorna Martin (Division of Forensic Medicine and Toxicology, University of Cape Town).

The study enjoys ethics approval from UCT and CPUT. Study Aim: The aim of the study is to qualitatively and quantitatively understand, scholarly define, document and strengthen the role and scope of the South African emergency care discipline with regard to domestic violence (DV), within the context of a national and global health sector response to GBV. Research Question and Scope of the Research: The question, in chief, is: What is the role and scope of the South African EC discipline with regard to domestic violence, within the context of a national and global health sector response to GBV? In order to trace the development of the Domestic Violence prevention and response strategy I would need to consider the legal opinions there-on.

As an outgoing member of the PBEC, I am aware of my obligations in terms of the Charter for Councillors and respect for confidentiality. I therefore seek permission to cite the 3 legal opinions that now strengthen the EC domestic violence policy. This, I believe, enhances the medical jurisprudence of EC and is in the public interest, given the considerable mortality (femicide) associated with domestic violence. I undertake to read the documents for scholarly interest only, insofar as it relates to my study. I am bound by the ethics of UCT as a scholar and the HPCSA as I am a registered ECP.

I propose that as the matter of Domestic Violence Screening has been decided by Council, it no longer remains a sensitive matter under consideration.

I thank you for your kind consideration of my request.

Kind regards

Navindhra Naidoo

Student: PhD Forensic Medicine

Outgoing member of the PBEC

Senior Lecturer: CPUT

Alta Pieters [AltaP@hpcsa.co.za]

Actions

To:
Navindhra Naidoo
Cc:
Rosina Mafetsa [RosinaM@hpcsa.co.za]

Inbox

Thursday, August 27, 2015 10:43 AM

You replied on 8/27/2015 12:19 PM.

Dear Mr Naidoo

With reference to your e-mail in the above regard I wish to advise that I consulted the Chairperson of the Professional Board for Emergency Care in the above regard and he confirmed that you may reflect in your PhD thesis relating to domestic violence medical jurisprudence on the legal opinions obtained on domestic violence.

Kind regards

Alta Pieters
Board Manager
HEALTH PROFESSIONS COUNCIL OF SOUTH AFRICA
553 Vermeulen Street, Arcadia, 0083
PO Box 205, Pretoria, 0001
Tel: +27 (0) 12 338 9480
Fax: +27 (0) 12 328 4862
Web: http://www.hpcsa.co.za
Email: altap@hpcsa.co.za

Annexure 15: Questionnaire: Information Document for consent/ assent

Dear Emergency Care Provider,

Study Title: GBV: Strengthening the role and scope of the Emergency Care discipline by promoting theory, policy and clinical praxis.

I, Mr. Navindhra Naidoo, am doing research on ***GBV: Strengthening the role and scope of the Emergency Care discipline by promoting theory, policy and clinical praxis***. I would like to learn about your current emergency care provider knowledge, attitudes, and beliefs towards victims of DV. The study is being done in the hope that it may inform emergency care training plans in the future. This research is also in part fulfillment of the requirements toward a PhD in Forensic Pathology from the University of Cape Town (UCT).

Because you are an emergency care practitioner, you are invited to participate in this research study. Your involvement will be to complete a simple questionnaire by answering questions relating to your attitudes, beliefs and knowledge of the management of DV victims. This should take about 30 minutes of your time. There are no other costs to you, except your time. Your responses will be anonymous and all information is treated as confidential.

There is no obligation for you to participate. Participation is voluntary. You may choose to stop participation at any time, without prejudice, by informing the researcher of your intention to withdraw. Should you experience any discomfort during the study, please contact myself for clarity or for referral to a specialist counsellor. Anonymous telephone counselling is also available. Again, participation is voluntary, and refusal to participate or discontinuing participation will involve no penalty or loss of any benefit to which you are otherwise entitled. Professional counselling is available should you need such a service as a result of your participation in this study. Your employer is aware of this study and has consented to data collection during work time. Absolute confidentiality cannot be guaranteed. Organizations that may inspect and/or copy research records for quality assurance and data analysis include groups such as the Research Ethics Committee.

There is no direct benefit from participation but it is hoped that the findings of the study will benefit emergency services and victims of domestic violence by showing how to improve services.

Yours faithfully

Mr. Navindhra Naidoo (B Tech EMC, HDE, MPH)

PhD: Forensic Pathology Candidate (UCT) [Student Number: NDXNAV014]

Emergency Care Practitioner (HPCSA: ECP 0000 116)

Senior Lecturer: Emergency Medical Sciences, Cape Peninsula University of Technology

For further information or reporting of study related adverse events: Contact the researcher:

Mr. Navindhra Naidoo, Private Bag X24, Bellville, 7535, Telephone: 021 959 6534/ 082 3372647

E-mail: naidoon@cput.ac.za

Alternately, contact the Faculty of Health Sciences, **Research Ethics Committee**, Room E52-24, Groote Schuur Hospital, Old Main Building, Observatory, 7925, Telephone: 021 4066338, Fax: 021 4066411

E-mail: sumayah.arafdien@uct.ac.za

Annexure 16: Interviews: Information Document for consent/ assent

Dear Emergency Care Provider,

Study Title: GBV: Strengthening the role and scope of the Emergency Care discipline by promoting theory, policy and clinical praxis.

I, Mr. Navindhra Naidoo, am doing research on ***GBV: Strengthening the role and scope of the Emergency Care discipline by promoting theory, policy and clinical praxis***. I would like to learn about your current emergency care provider practice toward victims of domestic violence. The study is being done in the hope that it may inform emergency care training plans in the future. This research is also in part fulfillment of the requirements toward a PhD in Forensic Pathology from the University of Cape Town (UCT).

Because you are a representative of the HPCSA and/or the Professional Board for Emergency Care, you are invited to participate in this research study. Your involvement will be to participate in an interview about emergency care and domestic violence. This should take about 1 hour. There are no other costs to you. Your responses will be anonymous and all information is treated as confidential.

There is no obligation for you to participate. Participation is voluntary. You may choose to stop participation at any time, without prejudice, by informing the researcher of your intention to withdraw. Should you experience any discomfort during the study, please check with me for clarity. Refusal to participate or discontinuing participation will involve no penalty or loss of any benefit to which you are otherwise entitled. Absolute confidentiality cannot be guaranteed. Organizations that may inspect and/or copy research records for quality assurance and data analysis include groups such as the Research Ethics Committee.

There is no direct benefit from participation but it is hoped that the findings of the study will benefit emergency services and victims of domestic violence by showing how to improve services.

Yours faithfully

Mr. Navindhra Naidoo (B Tech EMC, HDE, MPH)

PhD: Forensic Pathology Candidate (UCT) [Student Number: NDXNAV014]

Emergency Care Practitioner (HPCSA: ECP 0000 116)

Senior Lecturer: Emergency Medical Sciences, Cape Peninsula University of Technology

For further information or reporting of study related adverse events: Contact the researcher:

Mr. Navindhra Naidoo, Private Bag X24, Bellville, 7535, Telephone: 021 959 6534/ 082 3372647

E-mail: naidoon@cput.ac.za

Alternately, contact the Faculty of Health Sciences, **Research Ethics Committee**, Room E52-24, Groote Schuur Hospital, Old Main Building, Observatory, 7925, Telephone: 021 4066338, Fax: 021 4066411

E-mail: sumayah.arafdien@uct.ac.za

Annexure 17: FGD: Information Document for consent/ assent

Dear Emergency Care Provider,

Study Title: GBV: Strengthening the role and scope of the Emergency Care discipline by promoting theory, policy and clinical praxis.

I, Mr. Navindhra Naidoo, am doing research on ***GBV: Strengthening the role and scope of the Emergency Care discipline by promoting theory, policy and clinical praxis***. I would like to learn about your current emergency care provider practice toward victims of domestic violence. The study is being done in the hope that it may inform emergency care training plans in the future. This research is also in part fulfillment of the requirements toward a PhD in Forensic Pathology from the University of Cape Town (UCT).

Because you are an expert emergency care practitioner/educator, you are invited to participate in this research study. Your involvement will be to participate in a FGD about emergency care and domestic violence. This should take the duration of about 2 hours and includes refreshments. There are no other costs to you. Your responses will be anonymous (except to the 6-8 co-participants/ colleagues) and all information is treated as confidential. There is no preparation to be done as the discussion is about current and past individual, observed or organizational experiences of domestic violence in the emergency care field. Future possibilities may also be recommended by participants. The discussion will be digitally recorded and transcribed for anonymity. All names will be removed from the transcripts.

There is no obligation for you to participate. Participation is voluntary. You may choose to stop participation at any time, without prejudice, by informing the researcher of your intention to withdraw. Should you experience any discomfort during the study, please check with me for clarity or for referral to a specialist counselor. Refusal to participate or discontinuing participation will involve no penalty or loss of any benefit to which you are otherwise entitled. Professional counselling is available should you need such a service as a result of your participation in this study. Your employer is aware of this study and has consented to data collection during work time. Absolute confidentiality cannot be guaranteed. Organizations that may inspect and/or copy research records

for quality assurance and data analysis include groups such as the Research Ethics Committee.

There is no direct benefit from participation but it is hoped that the findings of the study will benefit emergency services and victims of domestic violence by showing how to improve services.

Yours faithfully

Mr. Navindhra Naidoo (B Tech EMC, HDE, MPH)

PhD: Forensic Pathology Candidate (UCT) [Student Number: NDXNAV014]

Emergency Care Practitioner (HPCSA: ECP 0000 116)

Senior Lecturer: Emergency Medical Sciences, Cape Peninsula University of Technology

For further information or reporting of study related adverse events: Contact the researcher:

Mr. Navindhra Naidoo, CPUT: EMS, Private Bag X24, Bellville, 7535, Telephone: 021 959 6534/ 082 3372647

E-mail: naidoon@cput.ac.za

Alternately, contact the Faculty of Health Sciences, **Research Ethics Committee**, Room E52-24, Groote Schuur Hospital, Old Main Building, Observatory, 7925, Telephone: 021 4066338, Fax: 021 4066411

E-mail: sumayah.arafdien@uct.ac.za

Annexure 18: Non-Participant Observation: Information Document for Consent/Assent

Dear Emergency Care Provider,

Study Title: GBV: Strengthening the role and scope of the Emergency Care discipline by promoting theory, policy and clinical praxis.

I, Mr. Navindhra Naidoo, am doing research on ***GBV: Strengthening the role and scope of the Emergency Care discipline by promoting theory, policy and clinical praxis***. I would like to learn about your current emergency care provider practice toward victims of domestic violence. The study is being done in the hope that it may inform emergency care training plans in the future. This research is also in part fulfillment of the requirements toward a PhD in Forensic Pathology from the University of Cape Town (UCT).

Because you are an emergency care practitioner, you are invited to participate in this research study. Your involvement will be to allow me, the principle researcher, to observe the (simulated or actual) management of patients for domestic violence. This should take the duration of at least one case of violence and one case of non-violence. There are no other costs to you. Your responses will be anonymous and all information is treated as confidential.

There is no obligation for you to participate. Participation is voluntary. You may choose to stop participation at any time, without prejudice, by informing the researcher of your intention to withdraw. Should you experience any discomfort during the study, please contact me for clarity or for referral to a specialist counselor. Anonymous telephone counselling is also available. Again, participation is voluntary, and refusal to participate or discontinuing participation will involve no penalty or loss of any benefit to which you are otherwise entitled. Professional counselling is available should you need such a service as a result of your participation in this study. Your employer is aware of this study and has consented to data collection during work time. Absolute confidentiality cannot be guaranteed. Organizations that may inspect and/or copy research records for quality assurance and data analysis include groups such as the Research Ethics Committee.

There is no direct benefit from participation but it is hoped that the findings of the study will benefit emergency services and victims of domestic violence by showing how to improve services.

Yours faithfully

Mr. Navindhra Naidoo (B Tech EMC, HDE, MPH)

PhD: Forensic Pathology Candidate (UCT) [Student Number: NDXNAV014]

Emergency Care Practitioner (HPCSA: ECP 0000 116)

Senior Lecturer: Emergency Medical Sciences, Cape Peninsula University of Technology

For further information or reporting of study related adverse events: Contact the researcher:

Mr. Navindhra Naidoo, Private Bag X24, Bellville, 7535, Telephone: 021 959 6534/ 082 3372647

E-mail: naidoon@cput.ac.za

Alternately, contact the Faculty of Health Sciences, **Research Ethics Committee**, Room E52-24, Groote Schuur Hospital, Old Main Building, Observatory, 7925, Telephone: 021 4066338, Fax: 021 4066411

E-mail: sumayah.arafdien@uct.ac.za

Annexure 19: Informed Consent Reply Document

Study Title: GBV: Strengthening the role and scope of the Emergency Care discipline by promoting theory, policy and clinical praxis.

Consent to Participate in Research:

Research Method	Yes/ No
Questionnaire	
Observation	
FGD	

- You have been asked to participate in a research study.
- You have been informed about the study by Mr. Navindhra Naidoo.
- You may contact Mr. Navindhra Naidoo at 021- 958 6534/ 082 3372647 at any time if you have questions about the research.
- You may contact the Faculty of Health Sciences, Research Ethics Committee at the University of Cape Town if you have questions about your rights as a research subject.
- Your participation in this research is voluntary, and you will not be penalized or lose benefits if you refuse to participate or decide to stop.
- If participation is during your work time, your organisation's management has been informed and have consented to your participation.
- If you agree to participate, you will be given a copy of the participant information sheet.
- Professional counselling is available should you need such a service as a result of your participation in this study.

Acknowledgement/ Informed consent

I have read the information sheet for the study: GBV: Strengthening the role and scope of the Emergency Care discipline by promoting theory, policy and clinical praxis.

I understand what my involvement in the study means and I voluntarily agree to participate.

_____ _____

Signature of Participant Date

Annexure 20: Confidentiality (Non-disclosure) Agreement with Research Assistants

(Adapted from http://www.nolo.com/legal-encyclopedia/sample-confidentiality-agreement-nda-33343.html)

This Nondisclosure Agreement (the "Agreement") is entered into by and between Western Cape Government EMS located at EMS head office at Tygerburg Hospital ("Disclosing Party") and , located at ("Receiving Party") for the purpose of preventing the unauthorized disclosure of Confidential Information as defined below. The parties agree to enter into a confidential relationship with respect to the disclosure of certain confidential information ("Confidential Information").

1. **Definition of Confidential Information.** For purposes of this Agreement, "Confidential Information" shall include all information or material that has sensitive or protected medical information. All paper based and electronic material is to be regarded as "Confidential" even without explicit warning. If Confidential Information is transmitted orally, the Disclosing Party shall only communicate such to the research team and the Principal researcher.

2. **Exclusions from Confidential Information.** Receiving Party's obligations under this Agreement do not extend to information that is: (a) publicly known at the time of disclosure or subsequently becomes publicly known through no fault of the Receiving Party; (b) discovered or created by the Receiving Party before disclosure by Disclosing Party; (c) learned by the Receiving Party through legitimate means other than from the Disclosing Party or Disclosing Party's representatives; or (d) is disclosed by Receiving Party with Disclosing Party's prior written approval.

3. **Obligations of Receiving Party.** Receiving Party shall hold and maintain the Confidential Information in strictest confidence for the sole and exclusive benefit of the Disclosing Party. Receiving Party shall not, without prior written approval of Disclosing Party, use for Receiving Party's own benefit, publish, copy, or otherwise disclose to others, or permit the use by others for their benefit or to the detriment of Disclosing Party, any Confidential Information. Receiving Party shall return to Disclosing Party any and all records, notes, and other written, printed, or tangible materials in its possession pertaining to Confidential Information immediately if Disclosing Party requests it in writing.

4. **Time Periods.** The nondisclosure provisions of this Agreement shall survive the termination of this Agreement and Receiving Party's duty to hold Confidential Information in confidence shall remain in effect.

5. **Relationships.** Nothing contained in this Agreement shall be deemed to constitute either party a partner, research collaborator or employee of the other party for any purpose.

6. **Severability.** If a court finds any provision of this Agreement invalid or unenforceable, the remainder o this Agreement shall be interpreted so as best to effect the intent of the parties.

7. **Integration.** This Agreement expresses the complete understanding of the parties with respect to the subject matter and supersedes all prior proposals, agreements, representations, and understandings. This Agreement may not be amended except in a writing signed by both parties.

8. **Waiver.** The failure to exercise any right provided in this Agreement shall not be a waiver of prior or subsequent rights.

This Agreement and each party's obligations shall be binding on the individuals.

Disclosing Party	Receiving Party
By: WCG EMS or CPUT_____	By: _____
Printed Name: **Dr S de Vries or N Naidoo**	Printed Name: _____
Title: Director/ PI_____	Title: Research Assistant_
Dated: 08 June 2016_____	Dated: _____

Focus Group Discussion One

The results emerging from with eight educators from KZN included the following axial (interpretive) codes: need for role definition of EC providers in GBV, challenges to screening for DV remain, the institutional EMS capacity and individual will for GBV intervention needs enhancing and appraisal, respectively.

The role of EC practitioners in GBV

There was expression amongst some participants that prevention was part of the EC role. The prevention put forward was in the context of injury prevention. The argument was that DV is not a foreign concept as it may be present in the practitioners' own family. Non-involvement in DV detection and response was posited as a conscious choice motivated by fear of reprisals or family disintegration.

EC provider experiences of non-DV trauma influences the minimization of DV cases by decreasing tolerance of abuse in one participant's own relationship but conversely elevates the 'horror threshold' of violence in the lives of patients. "If you have a black eye, compared to somebody who's lost an arm on the side of the road"….suggests a hierarchy of injury or triage that does not consider the epidemiology of DV.

A victim mentality seems to emerge from strict and narrow definitions of the EC provider role. The 'do-gooder rescuer' becomes the villain by the act of premature reconciliation in the abusive relationship. It is strange that this villainous role is not assumed when paramedics have to be the bearer of bad news in failed or discontinued resuscitations, dead-on-arrival cases and delayed arrivals, for example.

> Also we [as paramedics], we were taught in a way that we should know everything. We are the jack of all trades. We are the lifesavers. We cannot make mistakes. Most women who are abused will go back….so we don't want to be the bad person….
>
> The uniform doesn't give you power. Most of the time, we are seeing things after they happen.

The return of the woman to the abusive home may be construed as a mistake by the EC provider if they had intervened. There seems to be tremendous pressure to be the rescuer and not the victim as the latter results in the imposition of guilt. The EMS power in DV cases, it would seem, is undermined by *post hoc* responses, all the time claiming "a level of judgment".

Challenges for DV screening: Practitioner motivations, lack of supportive systems and imperfect information

Response to cases of DV must not create embarrassment or shame or wrongful accusations as this constitutes secondary victimization. Challenges to DV intervention include: personal motivation to help, lack of supportive systems and imperfect information (including missing and poorly or non-communicated information).

Institutional capacity and individual will to address DV

Further, the EMS has institutional barriers such as narrowly constructed "job function" that serve to limit capacity to intervene in DV cases, such as by claiming "…prevention is not your job function". One participant falsely assumed the DV victim would be

offended or embarrassed by inquiry into the presence of DV. This assumption is contradictory to other potentially embarrassing situations during clinical assessment, such as excluding the presence of a priapism (penile erection) in acute spinal injury.

The real challenge is the EC practitioner's false assumptions about the duty to screen and patient responses to screening. The following responses emerged to the question: "How does the potential for the person to be offended affect our duty to screen?"

> It is not our job to ask every single reason. It is very unlikely for the person to open up because you asked.
>
> A lot of people might deny the experience of violence; however some might have level of trust and confidentiality because of your appearance.
>
> Is it our job to find every single woman who is abused? We could run a radio advert.
>
> The reality must dictate what happens. Curriculum must include it.

The consensus determination of the decision to undertake selective or universal screening could not be made by the group. The inclusion of screening in general was suggested, despite the inflexibility of the EMS.

Focus Group Discussion Two

Twelve educators volunteered for this FGD in KZN. Axial codes are underlined below. A summary of the themes emerging from this focus group includes the concealing of abuse with some explanation on its consequences. The value proposition of DV education in EMS is to encourage collaboration and to challenge the pretence of DV non-occurrence. Conflicted EC practice results in the delayed EC provision, diminished nature or denial of EC. There exists selective empathy and support of vigilantism by practitioners who simultaneously engage in subconscious subversion of the EMS and active reflection on practice. The paradox of practitioners as victims and perpetrators is enabled by participants' personal experiences of DV victimology or perpetration and has professional consequences. In some cases, the ambulance becomes a 'mobile abuse centre'. In addition, the professional role of EC workers in DV is delineated to include an advocacy and advisory role and support for selective screening. However, the potential for reduction of DV-related mortality was seen as an insufficient determination of core EMS function and forensic specialisation in EC was not supported by the group.

Concealing of abuse

DV identification is experienced by EC providers as commonly challenging. Parents, friends or the family tend to conceal child abuse. Adult victims often conceal the abuse of women. The concealment by the perpetrators, the victims and family members imply a collective concealment of abuse. Overt concealment may be an act of denial, but it may serve to stigmatize abuse and drive its occurrence underground thereby undermining prevalence data and rendering provision of care improbable. Reference to victims as "regular customers" suggests the serial nature of abuse.

> I think the hardest part is to identify…that it is domestic violence or it is the abuse of a child because at most times…being a child, it is being covered up by one or both parents or their friends or their family even it involves a child or a woman because she never tells you that it's a mate or a life partner who assaulted her because she always makes an excuse of it. Once you can identify it that is the only time you can inform the hospital, to take it further.

Failure to identify DV, in practice, results in protracting the secrecy or concealment of the DV occurrence. Practitioners unwittingly conceal DV through 'NAI' nomenclature on the PRF[128]. Reframing DV as a non-accidental injury (NAI) emphasizes the injury and not the cause. This is typically a biomedical response that simultaneously masks the violence and de-emphasizes the perpetrator. NAI is not intended to prevent any pursuit of accountability for the violence. In fact, the negative connotation of 'NAI' has as its purpose to invoke a criminal justice response, yet in practice, by not reporting NAIs, the health system may vicariously 'conceal' them.

Consequences of concealing abuse are many. To mitigate the risk of this kind of concealment, responsible referral is crucial irrespective of the certainty of the provisional diagnosis. Participant's experience was that the benefit of any clinical doubt was accrued to the EC provider, not the victim. Medical ethics prioritize the patients' interests above all others.

---

[128] Patient Report Form (PRF): a standardised form to document clinical findings, history and response to treatment for the purpose of medico-legal accountability and continuity of care.

In the context of child injuries, the multiple vulnerabilities of the child, dependency and mistrust as well as unequal power relations necessitate that the clinician champion the child's interests. Ethical prehospital practice, according to a participant, "…depends [on] who you [are] handing it over to". That ethical prehospital practice is seen to be contingent on the referral is expressive of uncertainty in the response.

The choice of the provisional diagnosis of 'non-accidental injury' over a case of 'domestic violence' or 'child abuse' and the hospital referral may be underscored by self-serving interests. The fear of civil liability was unanimous despite no knowledge of such actual cases. This fear may be irrational, in the absence of legal precedent, or overstated in the South African EC context.

There is also a suggestion of EMS educators being disconnected from EMS operations by such hypothetical assumptions. It would seem that there is inadequate personal/professional liability insurance cover and/or poor protection from the EMS employers under whose direction practitioners work.

The value proposition[129] of DV education in EMS

Current EMS pedagogy excludes the forensic role. The conflation of professional role with operational function is apparent, but a concession to "add it in a module" was made. Only the ECT course had a week-long 'behavioural module'. However, enabling policies, operational guidelines and a functional system was still missing. One participant said: "Currently, nothing is done by our control centre. It is all done by the hospital."

Challenging the pretence of DV non-occurrence is a benefit of DV education in EC. The incidence and prevalence of violence and abuse in our society has practice-change[130] meaning for EC. Teaching DV intervention, supported by protocol and policy, may improve DV recognition and intervention and minimise "concealment". To "turn a blind eye" is to knowingly refuse to acknowledge something which you know to be real. The benefit of getting practitioners to knowingly acknowledge DV, social and health burden, and their consonant role, to be real is indeed a worthy value proposition. Currently, there seemingly deficient protocol and policy enables the turning of 'a blind eye'.

Conflicted[131] EC practice

EC providers are not immune to prejudicial care toward perpetrators of child abuse. Aware of the child rape, the EC of the perpetrator (who is now also a victim of vigilantism) created conflict in the mind of the paramedic and was burdensome to the extent that the practitioner held a strong desire to under-treat the alleged rapist. The under-treatment was argued as "human nature" and had manifestations such as pain relief "not exactly" having been provided.

> I find it very strange…I had experiences where a child has been raped and the community hit this guy and I had to still treat and transport him. It became a conflict and put a strain on me. Yes [I was conflicted], seeing what he had done

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[129] A value proposition is a promise of value to be delivered, communicated, and acknowledged. This is a term usually used in business and health economics.

[130] Practice-change refers to the potential for clinical practice to be altered.

[131] Conflict refers to having or showing confused and mutually inconsistent feelings.

> to the child and now having to treat the guy more than the child, because the child was treated separately…
>
> If it was life threatening you would definitely treat it to the maximum, however not full. The intentions are good but if you weight [treatment from] 0-100%, you'd treat say 60%.

Whilst the case above was the deliberate withholding of optimum care; the one below indicates the delay of care by the paramedic being held hostage. It shows the EC provider's forced witnessing of the interpersonal violence and obstructed medical response, to fulfil the conditions for retribution. The participant indicated that "…I did everything that I had to do for him", except of course to prevent the assault (without presuming the ability to do so). It is also questionable whether one can properly deliver EC and perform optimally after being held hostage and having borne witness to a case of 'mob-justice'. In both cases, the central goal is retribution and the outcome is that EC is delayed, diminished or denied. The ethical dilemma in the case above is that it is the paramedic - the caregiver - that is seeking retribution through the power of the profession. It is the presence of partiality, impartiality and indifference in EC that deserves further critique.

> To be honest, I have come across such a case. But I had to do what I had to do. I also came across a case where some guys killed someone known to the community and they beat them and one of them was badly injured. Community members held me on scene and told me I am not going anywhere. They assaulted they guy in front of me and told me to treat him. To be honest, I did everything that I had to do for him…No [I did not feel sorry]. I was doing my job. I was just impartial [not indifferent].

The impact of the above experience is delayed provision, diminished nature or denial of EC and in all instances, the public interest principle is undermined.

Linked to the prejudicial care above, participants also demonstrated selective empathy and support for vigilantism. Notwithstanding the crimes for which they are accused, save for rape, the ability for practitioners to feel sorry for such victims of vigilante justice is present, on the basis that "we are all humans". The poor criminal justice response, particularly to sexual violence, was used by EC providers to condone acts of vigilantism. Some supported the vigilantism as it resembled justice. "I have a feeling like justice has taken place." Another concern was the potential to perpetuate injustice by not catching "the right person".

> I can feel sorry. Obviously, if it is a rapist then it is a different thing…but when the community takes it into their own hands then it is a different story. However with the justice system we have, you cannot really blame communities, especially with things like rape….
>
> Especially if it is the rape of a kid, the rape of a female that is when we become judgmental without actually acknowledging it. When you're treating that perpetrator or supposed perpetrator…, you give him the bare treatment and take him to hospital…it is human nature…
>
> We all do the same thing.

Practitioners were unanimously acknowledged as judgmental as they were from a community and were human. The difficulty is that the test for ethical breach is that of the reasonable EC provider, not the emotionally biased human. That it may be common practice is not to say that it is either reasonable for the profession or

acceptable to the society. In fact, there was shameful acceptance that this was bad for the profession, but condoned by common practice.

Another category of conflicted care identified is the subconscious subversion of EC by violating the ethical regulation of providing for safety and the ethical code of 'doing no further harm'.

> Yes [there is reflection]. I look back at the cases I did. I do that quietly for self-improvement. That is how you are going to improve yourself when you are out there treating a patient.
>
> Yes you have some guilt associated to that. You could have done more. You should not be judgmental. You should treat the person on what they have. It might not even be the perpetrator but because he was found there trying to help…they accused him and they assaulted him…

The potential to avert the subversion is in the acts of critical self-reflection that is indicated above. The problem and the solution seemed juxtaposed.

The paradox of practitioners as victims and perpetrators

EC providers endure personal experiences and professional consequences of DV. The act of support for vigilantes and disempowered practice may be causally linked to the direct victimization of the female EC worker as expressed below. Although the psychology of DV and help-seeking practices of practitioners appears the same as for lay people, the notion of the practitioner as victim is paradoxical.

> I was gonna talk about female paramedics…all paramedics…because most of us we are the victims of the abuse…as female paramedics. I have consulted with some of our students who have had some of those experiences of being abused by their partners,…but when you ask if they have reported to the police-SAPS the response is: "No, I am scared" or "After he had done beating me he'll apologize and we make things better, but now I feel like I wanna leave."

Unsurprisingly, caregivers themselves also experience abuse or perpetrate violence in their own relationships. The question then remains, how does that influence how they respond to other victims of violence?

> With the female [EC provider], because [of] the experience, for them to talk to that lady who is experiencing that same thing, sometimes they cannot give advice [to the person who is experiencing abuse] because it is the same thing that is happening to them. How do they tell the person what to do as they are unable to do anything for themselves?
>
> With the males of the paramedics…some of them…they are also abusers. So when they get to the scene where the male has abused the female… sometimes they take sides or they say they deserve that. They end [up] not reporting [the cases] to SAPS or advise victims on what to do.

Thus, male and female EC providers experience DV themselves and are therefore ill prepared to give advice because their professional role conflicts with their domestic experience. Practitioners could not really give advice and if they did it would probably be the wrong advice. Despite experiencing abuse, empathy was still lacking. There is a level of judgment in the treatment of perpetrators. Male practitioners, who also abuse,

would likely be partial to the perpetrator and blame the victim. The challenge raised is the use of subjective experience of abuse to improve our responses to DV without being conflicted. If that subjective experience of engendered violence is to have perpetrated it, then practitioners are complicit. Encouraged by the revelation of abuse, a male participant raised concern about the perceived lack of accountability for practitioners who allegedly perpetrate abuse in the ambulance.

In cases where staff are abusing patients, it would seem that the EMS institution did not address it effectively, or failed to prevent such a re-occurrence. The nature of the offence and the penalty do not correlate.

> There is a fourth view where us as providers are actually abusing patients…I know of cases. Most of my life was operations. Colleagues working in an ambulance service…they abuse patients…it was in the papers some years ago, the female was jumped out naked from the back of the ambulance. The perpetrator is still working in the service. He did it again, the same, five or six years later. Those are the reported cases. What happened in between?

How the above case was dealt with is not transparent as it seemed it was unknown if the matter was reported to the HPCSA. The lack of resolution in this matter means one has to work with people who are thought to have questionable intentions and motives and the partiality of response to such individuals is 'premeditated'. The trust-relationship between practitioners would appear to be broken.

> When we are on scene together and when I see him, it affects my…er…. I never had the opportunity to treat him but if I had to I would not be impartial.

When one considers the conduct of the crew that was driving, and the notion of serial offending and limited evidence; it seems there *is* trust and collusion amongst perpetrators and their enabling supporters.

The role of EC workers in DV

Although currently not capacitated to do so, an advocacy[132] and advisory role was thought possible. This possibility is given expression by training of practitioners, partnerships and supportive networks.

> Maybe we should be enlightened to give appropriate information to the victims of violence. Advise them of their rights and what can be done.

> Partnership with forensics or…someone with a legal background or support group. .You need to know who to call to come and take over the whole situation, a support network.

Currently there is no network of any kind used by EMS. Victims may refuse transportation to hospital out of fear of reprisals for DV disclosure. This fear is exemplified in cases where murders still occur in the presence of a protection order. The discretion of the police is thought to be problematic, particularly when swayed by the perpetrator who may assume a less threatening demeanour.

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[132] Advocacy refers to public support for or recommendation of a particular cause or policy, in this case, DV prevention.

There was support for selective screening. Summoning SAPS was particularly valid if the perpetrator attempted to prevent, obstruct or control the provision of care on the premise that he/she did not trust the practitioners. The rationale however was for SAPS to vindicate the practitioners, as opposed to removing the obstruction to care. Since SAPS may be delayed or not attend, screening for DV by practitioners was offered as a solution. Facilitators of EMS education would need to be educated on DV recognition.

The consensus view was that notwithstanding SAPS or victim conduct, practitioners needed predetermined procedures or protocols and requisite knowledge to teach it. It remained the SAPS role to literally stop the violence, not EMS.

> We need to have a set procedure or protocol on how to deal with it, whether it is contacting SAPS or transporting the patient to the hospital and let them handle it but from our side…in terms of trying to stop a husband from beating his wife; that is something we cannot do. That is for SAPS. We need to be able to recognize it and we need to be able to take the next step. Whether they want the support or not; or whether they want SAPS there or not; or whether they want to go to hospital or not, we need set procedures in place and…adequate knowledge…Even if we were to include it on a basic course…so we have the knowledge behind [the experience]… [Consensus]

There was some partiality to selective screening to limit embarrassment or mistakes. Because of these risks of wrong assumptions the notion of a screening tool was supported. This coupled with debriefing DV cases would reduce risks.

Reduction of mortality was not a determination of core EMS function at present. In response to whether EMS can actually influence GBV mortality and morbidity it was stated that teaching will lead to better identification and that the resultant preventative measures will reduce mortality. Still, it is uncertain what the act of preventing practitioners from walking away will influence.

Despite the potential to reduce mortality, there was sentiment that DV screening and intervention was not an EMS core function. The consolation was to participate in a community project. When challenged on whether DV response should be included in the core function of EMS and practitioners, discordant voices emerged. This however was conditional with community and political buy in. Resource limitations were cited to justify an inability to maintain DV responses as central to EMS function. Another participant thought to reconcile the idea that if it were to be a core function then resources would be attached as it would be considered a ‘funded mandate’.

The group perspective was that EC providers should be forensic practitioners in the general sense. EC practitioners as forensic specialists were not conceded to. This is not surprising as specialisation in prevention is a global rarity (Garcia-Moreno, et al., 2014). An example of such knowledge is legal compliance and defence of injury reporting. The Patient Report Form (PRF) provides the medical record of the assessment and treatment of a patient. Legal training on PRF completion was needed to enhance the probative value of the PRF as documentary evidence.

> Looking at everything…in order for us to play a constructive role, remember we got to be part of the evidence. In order to make sure that the evidence we record on our PRFs…we need legal training… I can’t say someone was stabbed…I did not see it. As training providers we need to train whoever we train to know how to complete PRF properly, because when it goes to court that document must be tight in order to get conviction.

Direct corroboratory evidence in this regard includes a WC EMS research project that found 100% (n = 229 of 5873 total cases) medico-legal *non-compliance* of PRFs in cases where patients had refused transportation to hospital (Spicer & Sobuwa, 2014).

Focus Group Discussion Three

The third KZN FGD had 10 participants. The axial themes were the implications of DV epidemiology on EMS, enculturation of violence, threats to DV intervention, re-orientation of EC for broader responsivity and forensic practice, and a challenge for EC protagonists to act.

DV Epidemiology

Participants were not surprised by the extent of the problem of interpersonal violence in the country, as much as by the partner being the perpetrator. The guessed explanation provided for this was societal and cultural blame. One participant thought the DV statistics were under-stated considering the seasonal media hype and some areas being more endemic than others. This was supported by witnessed accounts of non-reported cases related to poor socio-economic and socio-geographic contexts.

The experience above was also that DV is not a problem of the poor alone; that people in wealthy communities also perpetrated and experienced violence. The participant's lay verdict on Oscar Pretorius was simply that: "He did it!" Their intuition was that his version was not believable.

The epidemiology of violence does not seem to guide practice. Evidence-based practice is therefore absent. EC is 'short-termist' and un-contextualized.

> …from the average EMS worker do they consider statistics when they treat the victim of whatever violence?…In this case, where it is a [GBV], the average EMS worker would go to a home and treat the individual and not thinking who is not important, the family or the EMS worker, because we have no mind-set to think this is a possible victim of abuse. We will just take it as another violent episode and treat it without considering necessary steps that should be taken afterwards.

In some cases, there was also no confidence displayed in police effectiveness or will to process or acknowledge the crime. EC procedures for abuse of women have eroded with social acceptance of it as regular and inevitable.

Enculturation of violence

The suggestion that the media is complicit in informing and shaping what we believe was firmly stressed. The media was thought to influence underreporting of DV and the promotion of crime. Constant exposure to television (TV) displays of violence renders it normative and serves to desensitise people presumably from the horror and abnormality of the violence. The manifestation of such acceptance is the perceived societal non-response and the reductionist perspective: "It's a cultural issue." Whilst it may be true that cultural practices may promote GBV, practitioner belief in such conjecture without deeper analysis may serve to justify EMS inaction or practitioner indifference. There are cultural mechanisms within society that prevents people from getting help. Cultures can be created and recreated but in the case of GBV it seemed to be recreated in favour of men and abusers rather than the abused. This is supported by the notion of masculine hegemony as the new manifestation of patriarchy and the generational experience of violence perpetration or victimisation.

The concern for male victims and the case presented is reflective of the cognitive dissonance created by the confusing co-existence of violence and 'love' in marital

relationships. Participants did not assume there is equal contribution to the fight and that there is damage equality in the fight outcomes. Whether a perpetrator is male or female, essentially the rationale, the motives and the outcomes (except for mortality outcomes) are paralleled. This is about gender-neutral human rights; having the right to be free of violence and living a life free of fear. The idea of correlating different kinds of abuse relative to gender, suggests a positivist influenced biomedical demeanour that intends to generalise observations to a population, rather than generalizing observations of abuse to theoretical meaning and posturing for the profession. The self-assessment is that overt (tell-tale) signs of abuse are considered in the training, directly for paediatrics and geriatrics but only by extrapolation for women.

Threats to DV intervention

With limited field success, creating awareness in the classroom was thought more probable than the ability to screen for abuse or use clinical case finding. Amongst the reasons for limited field success was the victim's protection of the perpetrator, the false belief that the acute phase of the abuse would yield little intervention success and the practitioner's irrational protection of self-interests over patient interests.

The approach to DV scenes must be predicated on findings of a risk assessment. This however did not emerge. The default position was to summon the police and not to directly intervene. Public expressions of DV are in itself a red flag that the violence, once shrouded in secrecy, is now escalated and deserves a police response. Upon some discussion, the acceptance dawned that the educators were themselves unaware and therefore ill equipped to impart knowledge. The threats to DV intervention were therefore not rational conjecture, not supported with EC evidence or DV theory.

The Challenge to Act

In envisioning future EC practice, the notion of placing DV on the university's research agenda, to reduce mortality, yielded support from participants. Beyond that, the action is poorly articulated, and confusing. Limits on practitioner and educator roles emerge from absent DV reporting systems, and a lack of support that contrasts starkly with the UK EMS responses to violence. The will for educators and practitioners to respectively educate and report (refer) on DV cases is present. That clinicians should do so in an unsupportive EMS is the contention.

The complexity of the practitioner role and clinical guidance needed was expressed. Screening seemed to be at the heart of the role definition, be it routine or selective. Additional reporting to the current PRF may mitigate the deficiency of the current patient report forms. The assumption is that this could serve as a precursor to further action.

> We need to just have…insights. One is screening: Should we go out there and screen routinely every women or child that is at risk of abuse? What is the mechanism by which we can screen and identify? [The] Second part is who do we refer or report to should we have a reporting mandate? Should we have a discretion to report or not? If we are going forward any protocol we have in EMS would get to answer those questions. These are the questions we need to answer but we can't answer these questions not knowing what [expert] experiences are…what is going to work.

> I think I agree about the reporting structure. In the cases I have come across I could see that the injuries are inconsistent with what is being said, but who do you tell? We should have a piece of paper or a document to say this is a suspicion- follow up. It does not mean there *is* something but as a professional I suspect that something is off; send someone to check it out. That is the missing link! With the PRFs [patient report forms] nobody goes back and check that. We want something from our side. The additional piece of paper could make a huge difference in terms of action being taken.

A reporting system, as something to do in DV may promote the interest from the EMS as people will begin to do more, selectively. What is not selective is the professional and citizen responsibility to respond meaningfully.

> I think initially there is more work to do in terms of extra piece of paper to fill in but it's not something that we do routinely but when we come across it. The onus is on us professionals to report it…we are the society…we can't divorce ourselves from the fact that we have a responsibility as citizens and professionals.
>
> The health professions act says we should provide for the safety of the victims, but we are not providing for the safety of victims of [GBV] because: "The thing is the system, we can initiate it but the system does not follow through."

Whilst practitioners agreed on the confluence of professional and civic duty, and admitted to not protecting the safety of victims, the ultimate blame rests with the EMS system, health system, and by extension, social welfare and criminal justice as well.

Pre-hospital discharge does not preclude the need to refer to social services. Participants were desirous of legislation and unambiguous guidelines, suggesting a level of ignorance around what was available.

> As practitioners we should be able to report directly through or consult directly with somebody from social services. Often the women do not want to press charges. The hospitals are too busy to follow this up so that is where the missing link is. It's us as practitioners to be able to have communication links with social services.

EMS must enable the referral system and prehospital discharge. Such a call empowers practitioners but it is the EMS system that must offer the protection of patients and simultaneous guidance of the practitioners.

Curriculum and systems reforms were needed. The curriculum must link to legal rights and obligations to empower practitioners. Supporting the health information system and advocacy role was seen as the primary purpose of DV inclusion into EC curricula. "I don't think we should intervene with the actual situation but more to raise the red flag." The bias toward advocacy and not intervention was due to the perceived ethical dilemmas in intervention. The need for training to navigate these dilemmas was acknowledged.

The idea of GBV-mainstreaming[133] in EC was tabled by the researcher. It was posited that EC did not have to be always about 'gun-shots', stab wounds or motor vehicle accidents, to the exclusion of DV cases. Non-educational interventions suggested by participants were inter-agency collaboration, knowledge and tools for referral and feedback mechanisms. The lack of these considerations results in disappointment and disillusionment for the practitioner.

> The reality is we do not even know where the places are that we can refer the woman to or take them there. We can't say there is place there, here is the number- please contact them, we have no clear guidelines.

There was agreement that a multi-disciplinary approach should be used. There was concern for the capacity of forensic experts and therefore EMS could play a role in scene assessment and protection of scene integrity. To what extent should EMS practitioners personnel be forensic practitioners, public health practitioners or gender activists? It may be about role definition, went the discussion. The term 'EC practitioner' provides a status but it's also very damaging because it creates this myopic view of what the profession is as it's only acute emergencies that is dealt with. The DV cases may have a forensic trail of evidence that needs to be managed and EC providers are actually becoming part of the problem by not documenting correctly or upsetting the scene. Blunt trauma to the face does not necessarily imply a punch. The accused's claim that she fell may seem plausible. EC providers may introduce doubt in cases where the state must prove the case of violence perpetration beyond reasonable doubt.

Re-orientate EC providers for DV responsivity and forensic practice

There was agreement that the term 'emergency care' creates narrow mindedness in the profession to the exclusion of forensics, public health, advocacy, and other kinds of cases. It is seen as 'not what we do'. The current bias was toward reactive interventions for overt emergencies. The need to include GBV in the paramedic programme and to conscientise practitioners was agreed to.

The practical changes needed were to be able to document the case properly and to play the expert or credible witness. Underpinning this is the teaching and learning of wounds from a forensic approach.

> [The] Outcome is to stop the process. We need to break the cycle with some sort of intervention and it will be determined by the outcome [desired]…we need [a] specific approach, for example, talking about forensics in court.
>
> I think this is where the forensic comes in, trying to differentiate a blow or fist versus other blunt trauma in terms of injury in a court of law. We have been teaching lacerations from day one but we are not teaching a difference between a pipe and a fist…
>
> I think we are also too afraid it could have been a fist.

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[133] Gender Mainstreaming is a globally accepted strategy for promoting gender equality. GBV-mainstreaming is not an end in itself but a strategy, an approach, a means to achieve the goal of ending GBV. GBV-mainstreaming involves ensuring that gender perspectives and attention to the goal of GBV prevention are central to all EMS activities - policy development, research, advocacy/ dialogue, legislation, resource allocation, and planning, implementation and monitoring of programmes and projects.

The custodian of the PRF was thought to be the practitioner. On a balance of subjective and objective data, claims or suspicions of abuse can be made. The veracity of these claims depends on the forensic/GBV training received. The reliance on a social worker to accompany or be despatched to DV cases also emerged. Admittedly, the EMS training pays lip service to the issue of DV. Forensic medicine was thought to enhance the system's toolbox.

The acknowledgement that practitioners are disconnected from the experiences of victims is a starting point for change. According to participants, value-driven awareness throughout the programme will assist in gender-mainstreaming. The first responder status may be important for the team approaches of primary health care.

Focus Group Discussion Four

The ten participants in this WC FGD were all EMS educators of 10-25 years' EMS experience. They provided their experiences, concerns and educator and practitioner perspectives on DV and EC systems. They were able to consider the historical 'situatedness' of DV in EC, the challenges of current EMS operations and future implications of DV intervention in EC.

Without hesitation or dissent, the opening comment was that there was little emphasis on GBV or any violence within the community. EMS seems to concern itself with the emergency, medical and trauma consequences of the violence rather than any upstream measures, not necessarily from a lack of will, but from a lack of knowledge and information on what to do.

> I think that if you look at…GBV….Our main focus is on emergency medical care and not much emphasis is placed on GBV and or any violence with the community out there. Our main emphasis is on the emergency itself, the trauma, medical related side….when it comes to how to manage the situation (violence)….We lack the knowledge and information on what to do. We as health care providers lack the know-how to deal with GBV.

With participant perspectives on EC curriculum and practice, the results of the focus group include: challenges to EC responses to GBV; their understanding of GBV epidemiology; occupational risk, personal protection and the public interest of DV intervention in EC. DV and EC reciprocal implications also emerged with due consideration of the idea of DV specialisation in EC, classification and referral of DV cases, the need for an EMS reorientation and the normalising of the experience of GBV cases. Diagnostic probity and clinical/occupational risk, as a dominant theme, problematized clinical decision-making and typical responses to atypical patients. This gave further expression to notions of selective screening versus universal (routine) screening. The offering of some preconceptions and fallacious reasoning led to a discussion on therapeutic endpoints in DV intervention and the value proposition of EMS.

Challenges to EC responses to GBV from Curriculum to Practice

The group centred on challenges that accompany DV intervention rather than enabling conditions. Both the training and practice did not support DV intervention presently. As educators and practitioners the supposition is to have been trained to deal with GBV. Inadvertently articulating The Dreyfus Model of Skill Acquisition (Dreyfus & Dreyfus, 1996), it was deemed unfair to expect some behaviour of someone that is beyond their experience. The biased expectations toward, for example, cardiac care were enabled by the extensive coronary care training experience. The claim of cardiac care bias was unsolicited and suggests a systemic clinical bias. Whether an innocuous manner of speech or a linguistic marker, the EMS workforce was referred to in the masculine. Further, training is said to be brief (considering the short-course nature of the courses on offer) and DV intervention was not well supported by standard operating procedures in the EMS workplace.

The cultural competence requisite of DV sensitivity appeared to be absent from curricula or from its implementation. Still concerned with what a practitioner's role in a community would be, there was group consensus that primary health care needed to be included in the curriculum and that "information is a solution" because "In different cultures we might have problems" and that "people need[ed] to be taught about GBV." Notwithstanding the chapter on crisis intervention in the CCA and AEA curricula, it is

not given adequate expression. “It is not assessed on and there is not much emphasis on gender violence.” It is reduced to teachings on “mechanism of injury…part of assessing for cause, not how to manage it…”

> People need to be trained in this aspect and the know-how on how to deal with such situations. That’s one of our problems and because people are not trained they would rather not see or behave like they did not see.

The insufficiency of DV ‘training’ and primary health care contextualization of EC renders practitioners with voluntary blindness or a denial of the problem that manifests in one’s professional conduct within EMS organisations. Without seeking to be condoned, the participant’s reference to practitioners as ‘people’ acknowledges the fallibility and vulnerability of this category of care-givers. Reframed, the lack of primary health care contextualisation of EC may create professional myopia, but it is the lack of DV intervention training and content that leads to professional denial and the resultant organisational blindness.

Occupational risk, personal protection and the public interest

The discussion moved from population to individual exposure to GBV to EC system and provider responses. Hence, the emergent theme triangulated GBV induced occupational risk, personal protection and the public interest.

> Too many gaps man…to go there and say that this person was assaulted…what right do you have? Coming in there as a stranger basically, saying that this person was assaulted…What happens if that female turns back and says… “No, he is lying, I wasn’t assaulted…”? They make up again and everything is fine….here you make a case and this is why the stuff is not reported, because they are worried about their jobs- and I don’t blame them…You have to report but the problem is the guys are also worried about their jobs. The people who were assaulted go through the whole process and that persons turns back and says he is lying - now what?

The likeness of the EC provider to a “stranger” in the DV context provides for a common but disproved subtext: *DV is a private matter, not for outsiders to be concerned with!* This sentiment is reinforced with a somewhat rhetorical question on what rights place a duty on EC providers to allege assault. There was a pervasive fear of being accused by the victim of misdiagnosing the cause of her injuries, to the extent that it led practitioners to not report DV. This essentially hypothetical fear of patient-practitioner disagreement would, in turn erode the professional integrity of and create job insecurity for the EC provider, it is claimed.

Selection bias and misaligned expectations of practitioners were offered as possible explanations for the EC response. Preconceptions of what EMS is about preclude DV cases as “soft things-dealing with emotion...” Even when the concession is made to play a role in GBV, limits are prematurely set on its scope.

Notwithstanding the challenges raised and the absence of South African EMS data on GBV incidence, that EC needed to do more than was currently the case was strongly affirmed. Only one GBV-related information session (on children’s rights) was attended in a 10-year-period. It would appear that the misconceptions of patients’ rights may have been counter-productive to the GBV prevention imperative where EC providers feel disempowered and therefore do little, on the claim that they “do not want to violate patient rights”.

> Definitely, we need to do more. For the last ten years, there was a session that we attended in that ten years. The focus was on children. We have a responsibility to report that… if you look at the children's rights charter, informed consent and this was about children…I am not sure where we stand when we look at [GBV] and having adults in particular, and because of patients' rights we do not know where we stand and we do not want to violate patients' rights.

The perceived need and uncertainty above, to not be at risk of violating patient rights, was of such great concern that one submission was to have the patient append a signature to 'an acknowledgment of assault'; in the same way one administratively manages occupational risk. This is of interest as this kind of commitment is not expected of any other patient for any other presenting condition in the prehospital milieu. It points to a particular vulnerability, whether perceived or real, that EC providers endure when attending cases of DV.

> Get the patient to sign 'an acknowledgement of assault'. You come to a scene a patient says they have been assaulted you make them sign to confirm that they have been assaulted because at this point you have got something written on paper and then you as a practitioner are protected.

Challenging the above idea with the notion of patient refusal to acknowledge the abuse on the basis that it may bring mortal danger to them did not distract participants from mooting the need for job protection. Neither did an appeal to altruism, of the kind displayed in the face of danger from motor vehicle accident scenes, for example.

> Then the issue of consent comes in. Then you just leave it there, (as) one idea of protecting yourself. Because you can talk to anyone there and they will tell you what is going to happen to my job when the patient turns around. So we need protection.
>
> We need to be protected. You must be able to protect your staff. You cannot bring in something new when the staff is not protected.

This 'job preservation ideology' posits the DV victim as a non-credible patient that threatens to harm the EC practitioner to the extent that it prioritises the practitioner need (real or perceived) for protection over that of the DV victims. The practitioners' right to safety, in general, is not what is in question. Here, it is the preservation of an employment status over the safety and wellbeing of the DV victim giving rise to situational irony. The irony too, is that accountability is demanded from the victim and not the perpetrator. Being "half right" implies being 'half wrong'. Hence, the situational irony is legitimized by an ambivalence of values in the value argument purported.

> When we come up with something, we must look at the person itself…so we can care for the person but we must also look at the practitioners. You are half right when you say we are rescuers. We started with a passion, but we must also look at what happens when something happens to us.

Despite referring to DV cases as victims, the default position of participants was still practitioner protection with the connotation of practitioners as victims. Further, the protection sought was externally located. The statement that practitioners will not act in DV cases if not protected resonates with the withholding of labour as a bargaining tool in labour disputes. This is hardly the conduct of autonomous and empowered professionals. This represents therefore a parallel between DV victimology and the professional emasculation of the EC providers. So, DV cases are disempowered as "victims"; but so are the practitioners, disabled by the absence of so-called protection.

> I agree in helping the victims. We can make a plan how to take care of the patient but there is a big gap about who is going to take care of the practitioner because if the practitioner is not protected then the practitioner is not going to do anything.

In summary, the practitioner perceives DV cases as occupational hazard, promoting risk and the need for personal protection. The situational irony is that the DV victim is identified as the occupational hazard, not the perpetrator and that the 'rescuer' is also victim.

Epidemiology of GBV

The understanding of the epidemiology of GBV emerged as a theme. However, distorted and shallow perspectives emerged suggestive of cognitive dissonance for the practitioner. A direct question from a participant was: "GBV: is it directed at females or males or is it just….?" The subsequent acknowledgement was that if GBV was taught it is "...supposed to be both." Yet, it would appear that female assaults on males result in more freedom in case handling and presumably better health care provision to the male victims. The confusion was evident: more freedom where the female is the perpetrator but when it is the female that is assaulted, there is a change in mind and mood. Practitioners are more direct but less 'sensitive'.

There is open admission to disparate responses to victims based on gender. Such engendered responses from practitioners undermine the principle of equality of care and the acknowledgement of the human rights violation irrespective of the perpetrator's gender.

> You will have more sympathy with the female patient than with the male patient. But the males being assaulted doesn't get reported so much,…so there are no true statistics…there are more females being reported that's being abused from husbands or spouses or boyfriends…but not *vice versa*…'cos it is more (a case of) the males being assaulted by the females…feels incompetent, he feels ashamed so…he doesn't feel so freely to go and report and that, so we first need to find out: Is it majority females? Is it majority males?

The participant's contribution appears discursive, at face value. A deeper analysis suggests three simultaneously held incongruous beliefs. First, female victims appear deserving of more sympathy, probably due to the global prevalence of female abuse, or a societal imposition. Then, male victims are claimed to be underreported to the extent that "there are no true statistics". The participant closes with a defensive explanation of the male-victim underreporting and a call for the determination of the 'true' victim majority to precede an EMS response. The above rejects DV prevalence estimates. There is no regard for the "incompetence" and "shame" experienced by female victims that also contributes to their underreporting of DV incidents. This signals a denial of the current DV epidemiology, likely to be facilitated by a masculine lens or contradictory EMS experiences. The rest of the FGD casually identified the victim as female. To reduce any psychological discomfort and stress induced by this probable cognitive dissonance, a change in cognition is needed. There-in lies the challenge and opportunity: to allow DV epidemiology, congruent with evidence-based practice, to guide and inform EC responses. Simultaneously, since disbelief in prevalence estimates may be difficult to address, the GBV discourse should be predicated on the idea that violence perpetration by men or women are both human rights violations, with

the distinction that physical violence by men, with regards to nature and extent, has far reaching health impacts.

Participants tempered their statements with contextual relevance in considering the magnitude of the problem including: prevalence, incidence, frequency, triage limitations and biased responses from the police and EMS, reinforced hegemonic masculinity and disempowering practitioner behaviour. This was met with a sense of futility (or a lack of utility) in intervening in DV cases that are seen to be akin to psychiatric cases. This perceived 'sameness' of psychiatric and DV cases can be undermining to both. Interpersonal violence is associated with major depressive disorder and post-traumatic stress disorder but the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2013) does not 'equate' them. The criticism of the medicalisation of GBV is that it contributes to the 'othering' of the cause. The EC role was defined by the presence of the emergency - a stipulative definition. The acceptability of this argument lies in the acceptability of the stipulative definition which begs the question: How is the role defined in the absence of emergencies? Perhaps it is in emergencies that EC personnel derive most utility, and a sense of identity.

> It is not only this GBV. If we get a Type 27, what do you do in that situation….psychiatric patient….There is not much we can do…you have to have our soft skills or you can refer to SAP, if they come out or not. It is the same thing. Our job is really emergency…We cannot run away from that…It is part of our job.

The search for a justification of the ethical premise of 'do no harm', by intervening in DV cases, includes cases of overt trauma. Omission will denote complicity. Still it would appear that the ethical principles lived by are only conditionally so. Trauma is defined, in the ordinary sense, as any disruption to normal physiology. This is denoted as physical signs such as bleeding and fractures. After much deliberation, it emerged that false reports of DV were likely to be in the minority of cases and that if the femicide rate was high, practitioner intervention risk was justifiable.

> Let's say we look at this thing and we're reporting….maybe where it is falsely reported….what is the risk of…I am sure this will be minor ones, where it is falsely reported, for argument sake. I think 90% will still be correctly (reported). Rather investigate than be quiet and ignoring it…I am just hypothetically speaking. I am talking about that circle where that person has said I'm backing off and it is going to be better tomorrow…That would be the minority…If it is happening one every 6 hours, surely it is worth the risk?

The reported futility of interventions is encapsulated by the statement that (in any event), "The majority of people will withdraw their claims", supporting the above analysis that EC providers are portrayed as victims by the DV survivor. There was no acknowledgement that the withdrawing of a claim of DV does not preclude the existence of DV. One participant reported an assault occurring in the presence of the EMS crew where the practitioner also sustained injury. The concerns over practitioner purpose and utility are scope of the intervention and risk of practitioner injury. There is appreciation for the inebriated perpetrator and an inability to reason with him. The concerns are located at the level of the practitioner. Despite being EMS educators and knowledge translators there is no conceptualization of the problem beyond practitioner observations described with language that shallowly describes what is considered as acts of misogyny. The perpetrator is cited as "the person who assaulted her". Attempting murder is presented as "wanted to finish her off" which supports the objectification of women to the extent that they can be "switched off". The justification

for continuing the violence was that he was “still very angry with the lady”. Misogyny is not simply an act of anger. It is prejudice of or contempt for women manifested in hatred and acts of violence that are intended to harm, disfigure or erase.

> A woman was assaulted and our crew went there as they were assisting the patient. The person who assaulted her came back and wanted to finish her off- still very angry with the lady; but the crews had to intervene physically and when they did one of the crew members was stabbed. Then you think how best you can help a patient. At what point do you physically remove, to what degree do you intervene - SAP, or back off….we are not just there to rescue….you can become a victim as well.

Discourse on futility ought to be at the level of the survivor, not at the level of rescuer. EC providers regularly resuscitate clinically dead people with dismal prognoses. That seems to leave feelings of heroism, yet DV intervention breeds feelings of futility.

Reciprocal implications of DV and EC

Currently the EC discipline lacks forensic or other specialisation. Attempts by the EC board to create a professional category for specialists in EC were unsuccessful. As consolation, the PBEC would consider submissions to recognise additional qualifications, the designation of which would indirectly suffice for specialist recognition. Imperfect information, atypical presentations, limitations of prehospital diagnostics, ‘generic’ interventions and time pressures render clinical specialisation in EMS operations as a challenge. Further, protection of specialist scopes, by the exclusion of others, in the context of emergencies raise ethical and practical dilemmas.

Through the (distraction) fallacy (of equivocation), an attempt is made to argue against specialization. Attention is distracted from the weak point of the argument (that expectations of EMS management of DV scenes is unfair) by shifting meaning of ‘specialisation’ between premises (of scene management, curriculum imperatives and patient management). A lack of specialisation could condone limited responses in EC. DV identification and referral may very well be the functional scope for EC but it is premature preclusions that may be substantively unfair.

Specialisation is understood by the participant, to be at the level of doctoral scholarship. Whilst there is no specialisation in EMS currently, there is disproportionate knowledge transfer and questionable attention to the public interest. Master’s graduates in emergency medicine are emerging. The current EC bias could not be more cogently presented than that in the following rhetorical question: “Shouldn’t our field focus more on the bleeding and the dying?” Using the current skill set as justification for a narrow conception of the EC role cannot hold. That cannot be in the professional, patient or public interest. Can new skills not accrue? What of patient-centred and evidence-based care?

> It is the same problem we face in terms of violence…my personal opinion is do we specialize in our field? I don’t think so. Like someone who has PhD, they specialize in their field. Shouldn’t our field focus more on the bleeding and the dying? We are more skills based.

The notion of specialisation seems inconceivable. The response to a direct question on specialisation feasibility was: “No I don’t think so. The fields are too broad. Because we can’t specialize in gynaecology, cardiology, psychology…” How such views, by EMS educators, the EC vanguard, impact on professional growth and the social contract needs further analysis. The argument above could also make the case for

specialisation in EC, differentiated potentially by undergraduate and post-graduate scholarship. Presently, the commitment of a primary response appears to be overwhelming, hence the conservative demeanour. Still, the response offered is considerably more than what is current practice, and collaboration of specialist groups is found to be acceptable.

Classification and referral of DV cases is a major implication. Notwithstanding the special needs of DV survivors, an alternate view was that the standard referral system should cope with the DV referral. Referral typologies could be broadened from assault to a case of DV. Such concessions do not mask the poor understanding of DV mortality and morbidity risk. In the false dichotomy of soft and difficult cases, DV is considered 'soft' on the premise that death is not imminent. The EC providers' concern is the 'here and now'…the next fifteen minutes.

> We are now looking at the classification of cases like soft cases and difficult cases and when we look at the GBV case it's a soft case because one's life is not in immediate danger patient is not going to die immediately…the person is not going to die...

This spatial myopia prevents due consideration for a femicide every eight hours in RSA, or for the protracted and escalating nature of the abuse. The realization of DV sequelae and the need for primary and secondary prevention is not completely absent from the group. The self-imposed conditions of legal protection and collaborative approaches remain.

The EMS has the potential to be responsive to DV. "Because of mortality and morbidity all pregnant cases in the EMS are regarded as emergency and are prioritized." The mainstreaming of gender-based health needs is possible if roles are clearly defined and if the epidemiology is understood. Any classification has, as a base, a case definition. It is the sublimation of responses to DV that may lead to eventual gender-mainstreaming in EMS.

Normalising the experience of GBV cases by EC providers is potentially harmful. An additional explanation for the EMS reticence about DV cases is founded in eco-systemic theory that holds that EMS, as an organ of society, is reflective (as a microcosm), of the society at large. The EC response to violence may be an organic response to the normalisation and enculturation of violence in the society. The perceived disempowerment (from the idiom: "Our hands are tied…") lies in the underlying false belief that criminal justice responses suffice and an undermining of the health consequences of GBV.

The hope resides in the presence of varied personalities and attitudes (as indicated above) that will likely challenge the enculturation of violence as normal within the EMS. The consecutive opposing perspectives point to the extent of disagreement within the profession. It seems there is a need to nurture debates in the interest of elevating the GBV discourse in (and response by) EC.

> Our hands are tied…when you report the case to the police and when they don't respond it's not our problem. This needs to be reported to a social worker.
>
> It seems that everyone is saying it's the other's problem if we could have someone who could champion this but it seems to be like we need to share this responsibility and what can be the EMS role be? The police and the courts can

> do their part as well. We must document all that we have done for the patient and we need to make our statistical data and report what happens from point of contact and also till one gets to the hospital.

The above positions were contextualised in the Anene Booysen case; a seventeen-year-old teenager from Bredasdorp[134] who was raped and murdered in February 2013. Questions raised by her case include the delay and duration of the inter-hospital transfer, maintenance of the crime scene integrity, clinical documentation, and the EMS contribution to the case. Despite the national and international media coverage and public outcry, and the location of the case in the Western Cape, the participants were uncertain of where the Anene case was located. The defensive response was that "If in Cape Town, it would not have been a delayed referral. If in Manenberg, (it will be a) Thuthuzela Centre referral and they will send a 'female ambulance'."

Such regionally appropriate referrals and engendered responses do not explain weaknesses elsewhere in the health system. That geographic inequity and "female ambulances" were used in mitigation of ignorance of the Anene Booysen case, with which EMS was associated, is perhaps contemptuous. The use of "female ambulances", in the absence of any specialized GBV training does little to support the responsivity claim. In fact, it promotes denial that rape and other forms of sexual violence is the purview of the male majority of the EMS. For paradigmatic change to occur, the 'untying of hands' must be gender neutral and system-wide. There must be no situational irony or doubt about whose hands (literal or figurative) are actually tied (pun intended). Alternately, such 'affirmative actions' in rape cases do not imply transformative action in the system.

Probity[135] of EC Diagnostics

The ratio of medical to trauma calls in GBV cases was not known. Yet it is this kind of data that EMS has potential to deliver on. Currently providers relied on "situational awareness" instead of EMS prevalence data or direct and routine inquiry into the presence or history of abuse. Given that not all DV victims disclose abuse upon hospital admission, it is the EMS data that could enable sentinel surveillance[136]. This information system potential is not exploited, largely due to the parochial[137] data parameters of present.

Typical EC patient assessment in an atypical DV patient cohort is mismatched, for example, when the patient conceals her own abuse from shame, guilt or fear. True to the skills-based lens of practitioners, it is only the behavioural response that is addressed, as if such behaviour is devoid of any cognition, knowledge, attitude, belief system or some historical influence. Viewing the EMS methods in terms of entry and

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[134] A rural town in the Western Cape, South Africa

[135] Confirmed integrity of EC diagnostics

[136] Sentinel Surveillance refers to monitoring of rate of occurrence of DV to assess the stability or change in DV-related health levels of a population. It is also the study of DV rates in a specific cohort such as in a geographic area or population subgroup to estimate trends in a larger population.

[137] Parochial implies narrowly constructed, short-sighted; such as response times.

exit appears mercenary where the ebb and flow of processes supposes no meaningful contribution, commitment or lasting impression. The unintended equating of the emergency medical service with an ambulance service is reductionist and indeed wasteful, given the high financial cost of EMS (almost one billion rand annually in the Western Cape alone).

Current ethical codes do not directly impose duties on EC personnel, but in general, they focus on the patient-practitioner relationship. It is conceivable that this may contribute to EC practitioners' myopia and lack of responsivity to DV as a challenge to social determinants of health and indeed social justice by "…prevent(ing) the violence before we go to the scene." The value proposition of EMS for DV was not apparent to all. Notwithstanding the time constraints for patient consultations and transportation, medical disempowerment was thought possible by reinforcing the perpetrators' ideas, increasing shame, guilt or self-blame. DV nuanced consultations were therefore needed.

> You are never going to correct the problem with the half an hour or 45 minutes with the patient but just the initial way you are with the person will set the tone for the rest of the person's recuperation.

To foster a nuanced approach, continuous professional development (CPD) was suggested. Still refusing EC ownership and control over the change in diagnostic approach, social worker expertise is sought. Moreover, feminine descriptors are attached to the deficient but normative diagnostic aspects of patient communication, detailed history taking and consent-seeking.

So, an unconscious or lifeless DV victim where there is no patient communication, shallow history-taking and implied consent, will be well resuscitated. By contrast, the awake patient requires considerable communication skills, comprehensive histories and informed consent; all of which are lacking in practice. This renders the prehospital diagnosis of the DV case improbable in both scenarios.

There was resistance to the notion of a DV-nuanced diagnostic approach. This resistance stemmed from an entrenched belief in pathogenesis. The practitioner's utility (and employ) was contingent upon the continued existence of a patient in the 'no patient, no work' dogma. In fact, this was defining of the emergency care practitioner's identity. Therefore, notions of prevention and health promotion appear counter-intuitive or challenging to the identity of the rescuer. This is anomalous as there is only record of unemployment for the basic qualification that is in over-supply. Could it be that high caseloads foster a belief in paradoxical loss of purpose?

A particular fallacious argument (by way of a faulty analogy) compared Myocardial Infarctions (MIs) with DV. MIs are not comparable to cases of DV. The misconception lies partly in seeing DV diagnosis and intervention as competitive with other conditions (like myocardial infarctions) for prioritization. This is indicative of a misconception of DV epidemiology and a narrow conception of what EMS is about. Diagnostic anchoring is present in the overt physical signs. There is admission that as the prescribed textbooks do not adequately deal with DV, the educators are not knowledgeable about DV content and therefore do not teach it. The statements on the inability to diagnose DV is challenged by the risks of omission to do so, i.e. returning to the same scene at another time for more serious trauma from escalated violence.

> I think for us it is emergencies. Our job is really to refer…just be aware how to diagnose certain things and be able to refer. We are about emergencies at the end of the day.

That “we are about emergencies” is certainly embedded in the “E” of EMS. One would have to test this from the cohort results to be sure. Still, this position is of no help if the DV victim is found dead on arrival. We may have some utility if she is near-death or critically injured. If so, is this sufficient ethical argument for not preventing DV? Do non-emergencies receive the same diagnostic benefits?

Prehospital screening and responses to DV

The communications centre is a critical resource in EMS. Underqualified communications staff is seen to weaken the system. This could be a confounding factor in the implementation of telephonic screening. Universal screening was supported as part of history-taking by EC providers. In addition, the police interview on competency to own a firearm or renewal of firearm licenses was thought to be a “tool for them to judge what is going on.” Challenges for more contrived EMS action include response time limitations and referral system deficiencies.

The case was presented that was indicative of the trepidation experienced and impromptu conduct by EC providers. Whilst the concerns for the presence of weapons and the risk of reprisals for helping are very real for the practitioner, actual harm - not the threat of harm - cannot be more real than that experienced by the acute victim. Help-seeking behaviour may include feigning unconsciousness to ward off further violence. Although the participant claimed: “She looked like she wanted help”, the participant does not openly admit to the dire need for help, to be protected from further harm and to receive medical attention. The deeper meaning of lying to an abusive husband and of supporting the pretence of feigning unconsciousness is not apparent in the case reflection. The escalated risk is inherent in cases of overt violence and the need by the victim to portray an endpoint of violence, i.e. unconsciousness which, second only to death, is indicative of a successful suppression or forced submission. The perpetrator being present during an EC consultation results in the further exercise of their power and control, and is intended to undermine the entire help-seeking and help-providing interaction resulting in further disempowerment (of patient and practitioner) and in unabated violence perpetuation. It is the parochial notion that EMS utility resides only in the acute phase of trauma that confounds the EMS value or value proposition for DV intervention. In the acute setting however, EMS may signal a reprieve to the violence - a strong predictor of survivability.

The lack of an organizational duty to report DV promotes the silence and blindness toward DV perpetration and victimology. The discretion to report or to act is sabotaged by the fear of the perpetrator unleashing their violence upon the responder and by the inability of the victim to corroborate the caregiver’s suspicion.

> I do feel that we need to help these people but there is the reality as well …and the additional burden. We need to think about the service. What do the people feel? You know…we need to report this. It is part of primary health care, its part why we came here, that’s why we doing this job; but at the end of the day, the guys, what they are thinking out there: “I don’t want to be/ get involved”. And we need to start educating the people, we need to change things, and it starts off with education….we need to identify the gaps…

Mandatory screening removes the discretion to do nothing. This has the benefit of taking “…the stigma away from it too. If you make it mandatory, if it has to be asked of everybody, then people become more familiar with it…” There was concern for public awareness. This concern was underpinned by the misconception that the public

conception and expectation of EMS was as narrowly construed as that of the practitioners.

> So if the public knows the job function we have …then they cannot tell us it is not our job …and the whole system will basically work.

The assumption that the system only works if the public expectations are aligned with that of practitioners is only partially correct. The additional requirement for a functional health system is for the expectations to be aligned to a hierarchy of health burdens and for health organisations to champion the alleviation and response to these burdens, as an ethical imperative, despite any public dissident opposition. The denial of the presence of abuse, by either the victim or the perpetrator, may be experienced as counter-intuitive by, or promotes, cognitive dissonance for the practitioner. The denial does not remove or explain the suspicion or evidence of the abuse.

> You go through all that effort and at the end of the day, the case is withdrawn and then you sit at square one again.

The emergent theme is that EC providers ironically assume the role of victim when abuse is denied in the presence of evidence in the acute setting. The fact that many claims and criminal cases of abuse are withdrawn does not invalidate a proper risk assessment and referral in as much as it does not justify poor or non-responses by the EMS. There was no substantive argument against screening potential. In fact, the moral imperative to act and thereby de-stigmatise the abuse was not contested. There were challenges to screening raised in the form of the lack of telephonic screening, no operating procedure, response time limitations and referral system deficiencies.

In response to the prompt for what therapeutic or other DV endpoints were desirable (arrest, change or awareness), participants re-iterated that "…We want something that will cover us if we do report; that is what we are looking for." In addition, change facilitated by enabling policy was needed. The Health Professions Act (56 of 1974) imposes the duty to protect the safety of the patient. The claim to the protection of safety cannot be sustained when DV cases are not managed properly. Consensus was not attained amongst participants.

> I agree with him that it's our duty to report but who protects you as a practitioner. That's where the gap is.
>
> Yes, but it boils down to...it comes down to your safety first. You can't be unsafe in order to save another person. We can say we want to our utmost best but…if the husband is there…we can't…you are fearing for your life.

The above comment is expressive of the contradictory positions and ambivalent perceptions amongst participants. The HPCSA imperative of public protection contrasts with the heightened need for practitioner protection. The reference to an oath and self-determination is that it does not equate personal safety, particularly if the threats are beyond one's control. The meaning this has for DV responsivity is that it in itself makes the case to improve EC contextual relevance and relative risks in DV intervention but is also indicative of the challenge to ideological change.

> We lack…we lack the steps to follow…we know what to do, but we lack the steps to make the decision to come down to what we need to do at the end of the day.

Sensing competing determinants of identity, participants were asked to comment on when it was correct to claim an educator or advocate role. The reply reaffirmed that the issue of practitioner safety created competing interests, reproduced and entrenched by

dogmatically teaching personal safety first. In the absence of implementation know-how, patient and practitioner interests are perceived to be in competition. The competing positions appear to emerge from a lack of implementation know-how and prejudices DV victims in the acute setting. As a solution, it was suggested that the determination of the value proposition of EC should come from the end-user. This sudden shift to the patient-centred approach is welcomed, but only attenuates the above contradictory positions. The allocation of responsibility for EC to the DV victim deserves further analysis.

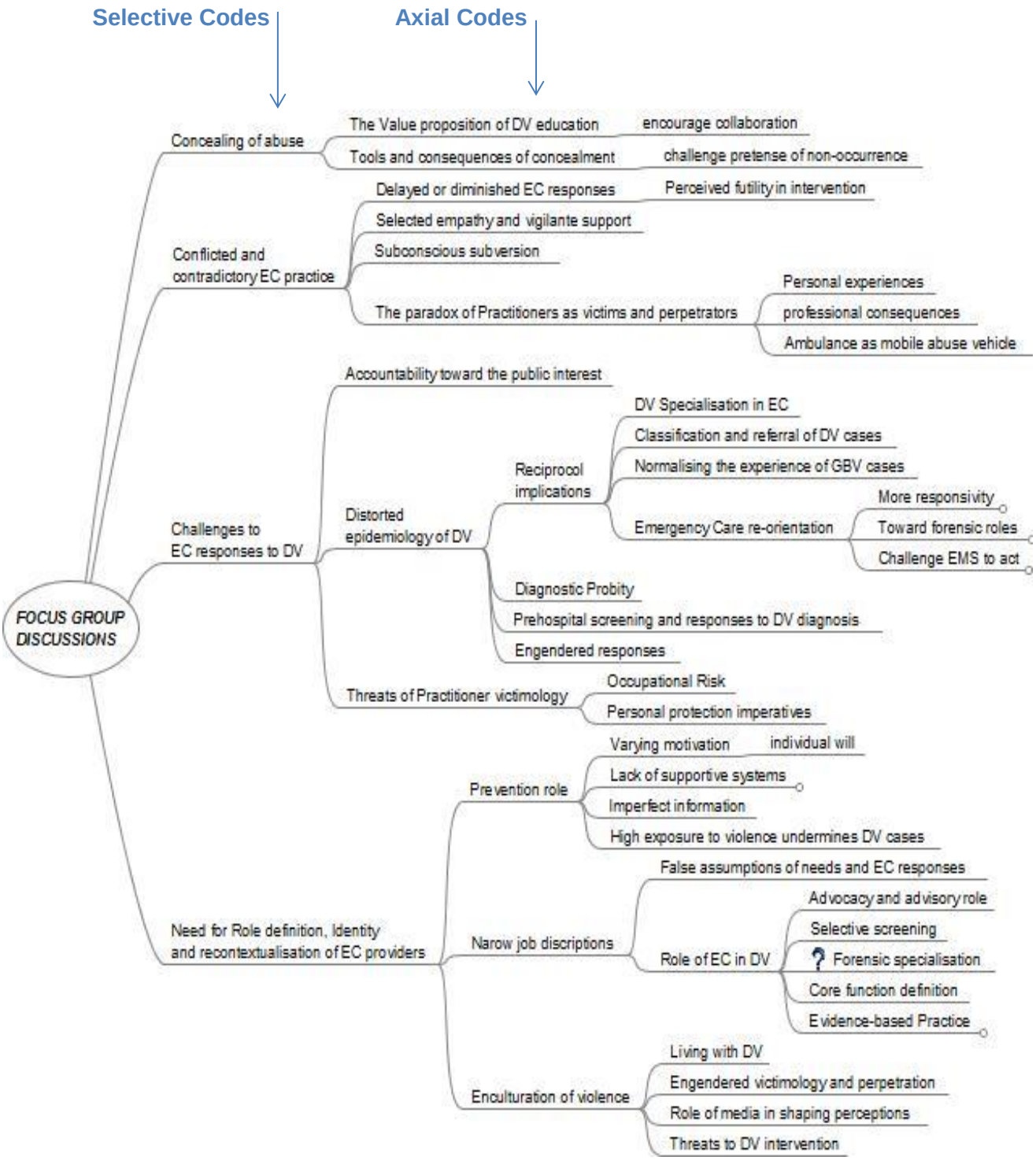
> There is this new change in the World Health [Organization]…they are saying that value needs to be determined from the end user…which would be the victim. Here we are sitting and we're looking at it from our point of view and it can be very, very different from what they feel. I'm say(ing) they will be the users…think that they actually want. I think that's a big gap. Someone would need to speak to the victims and ask what is it that you would expect from a service that responds to you.

The capacity to do more is considerably constrained by the absence of a 'resource' or referral book and very limited content being delivered on the AEA and CCA short-course programmes. The deficiency in DV content is reproduced on the two-year ECT qualification, a mid-level worker programme intended to replace the AEA and CCA.

> We used to have a sister [nurse], she has a social science degree…come in and discuss …one day or two day at the most, discuss such issues but this year our group hasn't had any and it seems we do not have much time…time does not allow on the short courses.

This qualification deficiency may be addressed by continuous professional development (CPD) programmes but this is constrained by staff availability due to shift work and facilitators who lack ethics and DV intervention training competencies. CPD is a compulsory HPCSA requirement, but the CPD activity choice remains that of the practitioner.

Annexure 22: Reverse contextualisation of Axial and Selective codes for FGDs



Annexure 23: Summary Tables: Survey and Cohort Study Results

Tables for Section 5.2

Table 1: DV Index Results by Demographic Characteristic for Survey of EC Providers in the cohort study (n=345)

Demographic Characteristic (% of sample)	Mean Myth Index Score (95% CI)	*p*-value*	Mean Self-Efficacy Index Score (95% CI)	*p*-value*	Mean Perceptions of Medical Capacity Index Score (95% CI)	*p*-value *
Sex						
Male (54.8)	7.96 (7.51-8.41)		13.10 (12.50-13.70)		10.08 (9.32-10.83)	
Female (45.2)	7.21 (6.81-7.61)		13.25 (12.60-13.91)		11.22 (10.42-12.02)	
Male-Female Difference	0.75 (0.11-1.39)	0.021				
Site						
WC EMS Operations (94.2)	7.69 (7.38-8.00)		13.25 (12.81-13.71)		10.73 (10.18-11.29)	
WC EMS COEC (3.2)	7.70 (5.03-10.37)		13.5 (11.08-15.92)		10.00 (6.25-13.75)	
CPUT EMS (2.0)	4.29 (3.26-5.31)		8.57 (4.92-12.23)		4.57 (0.76-8.38)	
KZN EMS Operations (0.002)	12 (-)†		14 (-)†		18 (-)†	
DUT EMC & R (0.002)	7 (-)†		15 (-)†		7 (-)†	
WC EMS Operations-CPUT EMS Difference	3.40 (0.41-6.39)	0.017	4.69 (0.36-9.02)	0.026	6.16 (0.82-11.51)	0.015
Age Group						
<25 years (3.2)	6.91 (5.28-8.54)		10.45 (7.17-13.74)		10.36 (5.75-14.98)	
25-29 years (14.8)	6.98 (6.23-7.73)		12.91 (11.78-14.05)		10.14 (8.67-11.60)	
30-34 years (20.0)	7.64 (6.99-8.29)		12.00 (10.94-13.06)		10.37 (9.27-11.48)	
35-39 years (24.1)	7.46 (6.78-8.15)		14.55 (13.66-15.44)		12.18 (11.02-13.34)	
40-44 years (16.2)	8.37 (7.55-9.19)		13.51 (12.41-14.60)		10.65 (9.34-11.97)	
45+ years (21.2)	7.85 (7.19-8.50)		13.10 (12.25-13.95)		9.36 (8.18-10.54)	
'35-39'-'<25' Difference			4.10 (0.32-7.88)	0.025		
'35-39'-'30-34' Difference			2.55 (0.56-4.55)	0.0039		
'35-39'-'45+' Difference					2.82 (0.37-5.28)	0.014
Race Group						
African (50.5)	8.18 (7.70-8.65)		14.33 (13.71-14.94)		12.77 (11.98-13.56)	
Coloured (43.3)	7.21 (6.71-		12.43 (11.72-		8.85 (8.05-9.66)	

	7.72)		13.14)			
Indian (1.4)	5.25 (2.86-7.64)		11.50 (5.62-17.38)		6.5 (0.07-12.93)	
White (4.8)	6.07 (4.86-7.28)		9.79 (7.02-12.55)		6.21 (3.83-8.60)	
African-Coloured Difference	0.96 (0.02-1.90)	0.042	1.89 (0.62-3.17)	0.00090	3.92 (2.37-5.47)	$< 10^{-7}$
African-White Difference	2.11 (0.04-4.17)	0.043	4.54 (1.67-7.41)	0.00033	6.56 (3.15-9.97)	7.10×10^{-6}
EMS-Related Experience						
0-1 years (7.4)	7.35 (6.33-8.36)		14.00 (12.53-15.47)		14.00 (12.53-15.47)	
2-5 years (28.1)	7.82 (7.27-8.36)		13.68 (12.80-14.57)		13.68 (12.80-14.57)	
6-10 years (24.6)	7.37 (6.69-8.05)		13.03 (12.16-13.89)		13.03 (12.16-13.89)	
11-15 years (15.1)	7.48 (6.66-8.30)		11.60 (10.35-12.86)		11.60 (10.35-12.86)	
16-20 years (10.0)	8.10 (6.85-9.35)		12.73 (11.16-14.30)		12.73 (11.16-14.30)	
>20 years (14.8)	7.29 (6.73-7.85)		13.98 (12.96-15.00)		13.98 (12.96-15.00)	
'2-5'-'11-15' Difference					3.16 (0.46-5.86)	0.011
'2-5'-'>20' Difference					2.94 (0.26-5.63)	0.022
Qualification: BAA						
Yes (15.4)	7.85 (7.52-8.19)		13.41 (12.93-13.89)		10.98 (10.39-11.57)	
No (84.6)	6.39 (5.68-7.10)		11.90 (10.79-13.02)		8.52 (7.16-9.88)	
'Yes'-'No' Difference	1.47 (0.60-2.33)	0.0010	1.51 (0.27-2.75)	0.017	2.46 (0.91-4.00)	0.0020
Qualification: AEA						
Yes (43.8)	7.30 (6.85-7.75)		12.55 (11.86-13.23)		9.47 (8.69-10.25)	
No (56.2)	7.88 (7.47-8.30)		13.68 (13.11-14.25)		11.47 (10.73-12.22)	
'Yes'-'No' Difference			-1.13 (-2.04--0.22)	0.015	-2.00 (-0.86--3.14)	0.00065
Qualification: CCA						
Yes (4.6)	6.27 (4.95-7.58)		10.38 (7.88-12.87)		7.40 (5.19-9.61)	
No (95.4)	7.69 (7.38-8.01)		13.32 (12.87-13.76)		10.74 (10.18-11.30)	
'Yes'-'No' Difference			-2.94 (-5.02--0.87)	0.0056	-3.34 (-6.01--0.67)	0.014
Qualification: NDip EMC						
Yes (2.9)	7.70 (5.51-9.89)		11.80 (8.41-15.19)		8.4 (4.01-12.79)	
No (97.1)	7.62 (7.31-7.93)		13.22 (12.77-13.66)		10.65 (10.10-11.20)	

Qualification: NCert EMC						
Yes (5.2)	6.61 (5.09-8.13)		11.59 (9.64-13.54)		9.17 (6.54-11.79)	
No (94.8)	7.69 (7.37-8.00)		13.26 (12.81-13.71)		10.67 (10.10-11.23)	
Qualification: BTech EMC						
Yes (3.2)	5.36 (4.31-6.42)		11.27 (8.62-13.93)		5.6 (3.31-7.89)	
No (96.8)	7.72 (7.40-8.03)		13.24 (12.79-13.69)		10.76 (10.21-11.32)	
'Yes'-'No' Difference	-2.35 (-4.08--0.62)	0.0078			-5.16 (-8.38--1.94)	0.0018
Qualification: Other						
Yes (13.0)	6.67 (5.85-7.48)		13.29 (12.03-14.55)		9.71 (7.92-11.50)	
No (87.0)	7.77 (7.44-8.10)		13.15 (12.68-13.63)		10.71 (10.14-11.29)	
'Yes'-'No' Difference	-1.11 (-2.04--0.17)	0.021				

* Tukey's HSD method was used to test significance of difference in means for each index across different categories. Differences are only reported here when statistically significant at 5% significance level.

† Confidence interval could not be computed due to small frequency.

Table 2: DV Definition Scores by Demographic Characteristic for Survey of EC Providers in the cohort study (n=345)

Demographic Characteristic (% of sample)	Mean DV Definition Score†	Significant Differences*		
Sex				
Male (54.8)	1.28			
Female (45.2)	1.55	Significantly > Male score (*p*-value: 0.031)		
Site				
WC EMS Operations (94.2)	1.38			
WC EMS COEC (3.2)	2			
CPUT EMS (2.0)	1.57			
KZN EMS Operations (0.002)	0			
DUT EMC & R (0.002)	1			
Age Group				
<25 years (3.2)	1.64			
25-29 years (14.8)	1.69	Significantly > '35-39' score (*p*-value: 0.015)	Significantly > '45+' score (*p*-value: 0.011)	
30-34 years (20.0)	1.54	Significantly > '35-39' score (*p*-	Significantly > '45+' score (*p*-	

		value: 0.042)	value: 0.032)	
35-39 years (24.1)	1.23			
40-44 years (16.2)	1.5			
45+ years (21.2)	1.18			
Race Group				
African (50.5)	1.55			
Coloured (43.3)	1.37			
Indian (1.4)	1.75			
White (4.8)	1.64			
EMS-Related Experience				
0-1 years (7.4)	1.72			
2-5 years (28.1)	1.58			
6-10 years (24.6)	1.57			
11-15 years (15.1)	1.12	Significantly < '0-1' score (*p*-value: 0.016)	Significantly < '2-5' score (*p*-value: 0.015)	Significantly < '6-10' score (*p*-value: 0.013)
16-20 years (10.0)	1.18			
>20 years (14.8)	1.14	Significantly < '0-1' score (*p*-value: 0.021)	Significantly < '2-5' score (*p*-value: 0.023)	Significantly < '6-10' score (*p*-value: 0.020)
Qualification: BAA				
Yes (15.4)	1.42			
No (84.6)	1.28			
Qualification: AEA				
Yes (43.8)	1.41			
No (56.2)	1.39			
Qualification: CCA				
Yes (4.6)	1.56			
No (95.4)	1.39			
Qualification: NDip EMC				
Yes (2.9)	1.40			
No (97.1)	1.40			
Qualification: NCert EMC				
Yes (5.2)	1.67			
No (94.8)	1.39			
Qualification: BTech EMC				
Yes (3.2)	1.82			
No (96.8)	1.39			
Qualification: Other				
Yes (13.0)	1.71	Significantly > 'No' score (*p*-value: 0.015)		
No (87.0)	1.35			

No. of calls per month				
0-25 (26.6)	1.56			
26-50 (20.1)	1.67	Significantly > '51-75' score (*p*-value: 0.030)	Significantly > '76-100' score (*p*-value: 0.015)	Significantly > '126-150' score (*p*-value: 0.0099)
51-75 (11.7)	1.23			
76-100 (13.5)	1.13			
101-125 (10.8)	1.61	Significantly > '126-150' score (*p*-value: 0.046)		
126-150 (17.4)	1.16			

* Dunn Test was used to test for significant difference in expected DV definition score across different categories. If nothing is reported in this column then no statistically significant differences were detected at 5% significance level.

Table 3: EMS Workers' Self-Reported Recognition and Diagnosis of DV

Proportion of cases	0-10%	10-20%	20-30%	30-40%	40-50%	50-60%	60-70%	70-80%	Weighted proportion
Proportion of Respondents who *recognised* DV in this proportion of cases	24.7 (21.9-27.5)	14.9 (12.1-17.7)	13.7 (10.9-16.5)	13.7 (10.9-16.5)	15.8 (13.0-18.6)	4.8 (2.0-7.5)	5.1 (2.3-7.8)	7.4 (4.7-10.2)	DV recognised in 30.3% of cases
Proportion of Respondents who *diagnosed* DV in this proportion of cases	17.8 (15.0-20.6)	15.1 (12.3-17.9)	13.3 (10.5-16.1)	18.4 (15.6-21.2)	16.6 (13.8-19.4)	8.8 (6.0-19.4)	5.4 (2.7-8.2)	4.5 (1.7-7.3)	DV diagnosed in 32.2% of cases

Tables for Section 5.3

Table 4: Characteristics of Retrospective Sample

Characteristic	Categories and their Proportions as % (95% CI)					
Base	Pinelands	Khayelitsha	Paarl	Worcester	Ceres/Tulbach	
	46.5	30.9	11.0	9.1	2.5	
Time of Day	Day	Night				
	50.8 (47.7-53.9)	49.2 (46.1-52.3)				
Sex (Dispatch Data)	Male	Female				
	13.4 (10.3-16.5)	86.7 (83.5-89.7)				
Age (Dispatch Data)	12-19	20-29	30-39	40-49	50-59	60+
	8.2 (5.1-11.3)	33.3 (30.2-36.4)	21.8 (18.7-24.9)	10.7 (7.6-13.8)	10.5 (7.4-13.6)	15.5 (12.4-18.6)

Dispatch Priority	Red, Orange (Emergency)	Yellow (Urgent)				
	40.5 (37.4-43.6)	59.5 (56.4-62.6)				
Dispatch Police Presence	Yes	No				
	0.6 (0-3.7)	99.4 (96.3-100)				
Complaint Presenting	Assault	Maternity	Asthma	Other medical	Inter-hospital transfers	All others
	16.0 (12.9-19.1)	12.5 (9.4-15.6)	2.7 (0-5.9)	49.0 (45.9-52.1)	10.2 (7.1-13.3)	9.6 (6.4-12.7)
Complaint on Arrival	Assault	Maternity	Asthma	Other medical	Inter-hospital transfers	All others
	15.9 (12.8-19.0)	12.7 (9.6-15.8)	2.7 (0-5.8)	46.5 (43.4-49.6)	12.5 (9.4-15.6)	9.7 (6.6-12.8)
Complaint History	Surgical Yes	Surgical No	CVA Yes	CVA No	HPT Yes	HPT No
	30.4 (27.3-33.5)	69.6 (66.5-72.7)	1.4 (0-4.5)	98.7 (95.6-100)	17.6 (14.5-20.7)	82.4 (79.3-85.5)
	IHD Yes	IHD No	Diabetes Yes	Diabetes No	Epilepsy Yes	Epilepsy No
	2.4 (0-5.5)	97.6 (94.5-100)	7.7 (4.6-10.8)	92.3 (89.2-95.4)	1.8 (0-4.9)	98.2 (95.1-100)
	TB Yes	TB No	Asthma Yes	Asthma No	COAD Yes	COAD No
	2.9 (0-6.0)	97.1 (94.0-100)	5.5 (2.3-8.6)	94.5 (91.4-97.6)	0.7 (0-3.8)	99.3 (96.2-100)
SA Triage Scale - Scene	Green	Yellow	Orange	Red	Blue	
	41.2 (38.1-44.3)	40.7 (37.6-43.8)	12.2 (9.1-15.3)	4.9 (1.7-8.0)	1.0 (0-4.2)	
SA Triage Scale - Destination	Green	Yellow	Orange	Red	Blue	
	39.4 (36.3-42.5)	41.4 (38.3-44.5)	14.6 (11.5-17.7)	4.0 (0.8-7.1)	0.6 (0-3.7)	
Injury Location	Head Yes	Head No	Neck Yes	Neck No	Arms Yes	Arms No
	5.1 (2.0-8.2)	94.9 (91.8-98.0)	1.0 (0-4.2)	99.0 (95.9-100)	2.6 (0-5.8)	97.4 (94.3-100)
	Legs Yes	Legs No	Front Torso Yes	Front Torso No	Back Torso Yes	Back Torso No
	2.1 (0-5.2)	97.9 (94.8-100)	4.4 (1.3-7.6)	95.6 (92.5-98.7)	2.6 (0-5.7)	97.4 (94.3-100)
	Secondary Survey Yes	Secondary Survey No				
	2.1 (0-5.3)	97.9 (94.8-100)				
Management	Airway Yes	Airway No	Breathing	Breathing	Circulation	Circulatio

			Yes	No	Yes	n No
	2.2 (0-5.3)	97.8 (94.7-100)	12.1 (9.0-15.2)	87.9 (84.8-91.0)	22.3 (19.2-25.4)	77.7 (74.6-80.8)
	Miscellaneous Yes	Miscellaneous No				
	1.7 (0-48.4)	98.3 (95.2-100)				
Patient refuses transport	Yes	No				
	3.1 (0-6.2)	96.9 (93.8-100)				
Refusal Reason	Non-urgent	Futile	Fear			
	75.0 (71.9-78.1)	18.8 (15.7-21.9)	6.3 (3.1-9.4)			
Crew Qualification	ALS	ILS	BLS			
	8.1 (5.0-11.2)	40.6 (37.5-43.7)	51.3 (48.2-54.4)			
HPCSA	ECP	ECT	ANT	ILS	BLS	
	0.03 (0-3.2)	8.1 (5.0-11.3)	0.1 (0-3.2)	40.5 (37.4-43.6)	51.3 (48.2-54.4)	
Referred to	Police	ED	Clinic	NGO	Other	Not referred
	0.1 (0-3.2)	93.4 (90.2-96.5)	0.2 (0-3.3)	0.04 (0-3.2)	2.6 (0-5.7)	3.7 (0.6-6.9)
Perpetrator Relationship	Spouse	Partner	Family member	Stranger		
	5.0 (0-14.6)	60.0 (38.5-81.5)	5.0 (0-14.6)	30.0 (9.9-50.1)		
Perpetrator Sex	Male	Female				
	92.3 (77.8-100)	7.7 (0-22.2)				
Type of Abuse	Physical	Emotional	Psychological	Other		
	89.7 (78.6-100)	3.5 (0-10.1)	3.5 (0-10.1)	3.5 (0-10.1)		
DV Detection	Yes	No				
	0.7 (0-3.8)	99.3 (96.2-100)				

Tables for Section 5.4

Table 5: Characteristics of Prospective Sample

Characteristic	Categories and their Proportions as % (95% CI)						
Patient Chief Complaint*	Assault	Other trauma	Gynaecology	Asthma	Infectious Disease	Other	
	24.7 (20.7-28.7)	6.0 (3.8-8.1)	13.9 (10.7-17.1)	4.4 (2.5-6.3)	4.9 (2.9-6.8)	47.5 (42.9-52.1)	
Type of Abuse*	Physical	Sexual	Emotional	Psychological	Verbal	Economic	Other

	32.9 (28.6-37.2)	5.3 (3.2-7.4)	20.8 (17.1-24.5)	10.6 (7.8-13.4)	22.3 (18.5-26.1)	5.1 (3.1-7.1)	1.8 (0.6-3.0)
DV Positive: Action Taken*	Admission to HC	Provided Info	Supported patient	Documented	Informed	Protected	
	47.2 (40.8-53.7)	33.8 (27.8-39.9)	47.6 (41.2-54.0)	43.0 (36.6-49.3)	43.7 (37.4-50.1)	15.9 (11.2-20.6)	
DV Uncertain: Action Taken*	Provided Info	Discharged	Treated	Referred	Other		
	23.1 (6.9-39.3)	0 (0-0)	26.9 (9.9-44.0)	50.0 (30.8-69.2)	15.4 (1.5-29.3)		
DV Negative: Action Taken*	Provided Info	Discharged	Treated	Referred	Other		
	65.4 (58.7-72.1)	15.5 (10.4-20.5)	49.5 (42.5-56.5)	82.0 (76.5-87.4)	10.3 (6.0-14.6)		
Safety Assessment*	Violence	Perp uses drugs	Perp made death threats	Perp has weapons	Patient afraid to go home	Perp or patient suicidal	
	60.1 (53.8-66.4)	65.7 (59.6-71.8)	36.9 (30.7-43.1)	33.5 (27.4-39.5)	24.9 (19.3-30.4)	20.2 (15.0-25.3)	
Referral*	Police	Hospital ED	Clinic	NGO	FBO	No referral	
	13.0 (9.9-16.1)	53.4 (48.8-58.0)	5.5 (3.4-7.6)	4.0 (2.2-5.8)	2.2 (0.9-3.6)	1.1 (0.1-2.1)	
Aspect of DV Screening found challenging*	Asking directly	Asking indirectly	Documenting case	Supporting victims	Conducting safety assessment	Victim referral	
	39.5 (35.0-44.0)	16.3 (12.9-19.7)	9.9 (7.2-12.7)	16.6 (13.2-20.0)	6.2 (4.0-8.4)	8.6 (6.0-11.2)	
Abuse Period (years)	< 2	2-5	5-10	10-15	> 15		
	43.3 (34.7-51.9)	24.4 (16.9-31.9)	13.4 (7.5-19.3)	10.2 (4.9-15.5)	8.7 (3.8-13.6)		
Alleged Perpetrator Sex	Male	Female					
	87.5 (82.7-92.3)	12.5 (7.7-17.3)					
Alleged Perpetrator Race	Black African	Coloured	Indian	White			
	43.2 (36.3-50.1)	53.3 (46.4-60.2)	0.5 (0-1.5)	3.0 (0.6-5.4)			

Alleged Perpetrator Age	12-19	20-29	30-39	40-49	50-59	60+	
	3.5 (1.0-6.1)	21.2 (15.5-26.9)	32.3 (25.8-38.8)	27.8 (21.6-34.0)	12.1 (7.6-16.6)	3.0 (0.6-5.4)	
Training prepared practitioner for DV screening	Not at all	Not sure	Somewhat	Mostly	Extremely well		
	5.9 (3.3-8.4)	4.6 (2.3-6.9)	14.5 (10.7-18.3)	41.5 (36.1-46.9)	33.5 (28.4-38.6)		

* Proportions do not add to 100% since more than one option could be selected by a single respondent.

Tables for Section 5.5

Table 6: Comparison of EC providers who returned screening forms to those who did not

Characteristic	Proportion returned screening forms % (95% CI)	Proportion did not return screening forms % (95% CI)	Odds Ratio (95% CI)	*p*-value for OR statistical significance
Sex				
Male	19.3 (14.3-25.9)	80.7 (74.1-85.9)	0.592 (0.351-0.998)	0.049
Female	28.8 (22.0-36.6)	71.2 (63.4-78.0)	-	-
Race				
Black African	16.1 (10.8-23.2)	83.9 (76.8-89.2)	-	-
Coloured	32.8 (24.8-41.8)	67.2 (58.2-75.2)	2.55 (1.40-4.63)	0.0022
Indian	33.3 (4.3-84.6)	66.7 (15.4-95.7)	2.61 (0.227-30.1)	0.44
White	45.5 (20.3-73.2)	54.5 (26.8-79.7)	4.36 (1.22-15.5)	0.02

Table 7: Predictors of DV Detection in prospective data

Characteristic	Proportion DV detected % (95% CI)	Proportion DV uncertain or not detected % (95% CI)	Odds Ratio (95% CI)*	*p*-value for OR statistical significance
Area				
Urban	58.8 (52.4-64.8)	41.3 (35.2-47.6)	1.87 (1.29-2.72)	0.0010
Rural	43.2 (36.7-49.9)	56.8 (50.1-63.3)	-	-
Practitioner Age Group				
20-29 years	51.0 (41.4-60.4)	49.0 (39.6-58.6)	2.30 (1.34-3.95)	0.0027
30-39 years	67.6 (59.6-74.7)	32.4 (25.3-40.4)	4.61 (2.75-7.73)	< 0.0001
40-49 years	54.3 (42.6-65.5)	45.7 (34.5-57.4)	2.62 (1.43-4.81)	0.0018
50-59 years	31.2 (23.6-39.9)	68.8 (60.1-76.4)	-	-
Practitioner Sex				
Male	45.5 (39.0-52.1)	54.5 (47.9-61.0)	0.629 (0.423-0.936)	0.022
Female	57.0 (49.6-64.0)	43.0 (36.0-50.4)	-	-
Practitioner Race				
Black African	80.5 (70.2-87.9)	19.5 (12.1-29.8)	-	-
Coloured	44.8 (39.6-50.2)	55.2 (49.8-60.4)	0.196 (0.107-0.359)	< 0.0001
Patient Sex				
Male	78.0 (64.5-87.4)	22.0 (12.6-35.5)	4.10 (2.03-8.28)	< 0.0001
Female	46.4 (41.1-51.7)	53.6 (48.3-58.9)	-	-
Frequency of EMS use				

Almost daily	54.6 (44.7-64.2)	45.4 (35.8-55.3)	0.196 (0.080-0.479)	0.0004
At least once a week	48.9 (35.1-62.9)	51.1 (37.1-64.9)	0.156 (0.058-0.417)	0.0002
At least once a month	37.0 (25.3-50.5)	63.0 (49.5-74.7)	0.096 (0.036-0.253)	< 0.0001
Every 2-3 months	39.7 (28.0-52.7)	60.3 (47.3-72.0)	0.107 (0.041-0.278)	< 0.0001
2-3 times a year	42.4 (30.5-55.2)	57.6 (44.8-69.5)	0.120 (0.046-0.310)	< 0.0001
Once a year	88.6 (73.2-95.6)	11.4 (4.4-26.8)	1.26 (0.340-4.69)	0.73
First time	86.0 (73.4-93.2)	14.0 (6.8-26.6)	-	-

* Note: The category with no Odds Ratio provided is the reference category to which other categories are compared.

Table 8: Safety Assessment Predictors of Physical Abuse

Characteristic	Physical Abuse % (95% CI)	No Physical Abuse % (95% CI)	Odds Ratio (95% CI)*	*p*-value for OR statistical significance
Violence has increased				
Yes	65.7 (57.5-73.1)	34.3 (26.9-42.5)	-	-
No	25.2 (17.9-34.3)	74.8 (65.7-82.1)	5.68 (3.25-9.93)	< 0.0001
Uncertain	49.0 (35.7-62.5)	51.0 (37.5-64.3)	1.99 (1.04-3.82)	0.038
Perp uses alcohol and drugs				
Yes	71.2 (63.6-77.9)	28.8 (22.1-36.4)	-	-
No	18.0 (11.3-27.4)	82.0 (72.6-88.7)	11.3 (5.93-21.5)	< 0.0001
Uncertain	37.0 (25.3-50.5)	63.0 (49.5-74.7)	4.21 (2.19-8.10)	< 0.0001
Perp threatened to kill patient				
Yes	74.4 (64.2-82.5)	25.6 (17.5-35.8)	-	-
No	32.2 (25.0-40.2)	67.8 (59.8-75.0)	0.163 (0.090-0.296)	< 0.0001
Uncertain	49.2 (37.2-61.4)	50.8 (38.6-62.8)	0.333 (0.167-0.665)	0.0018
Perp has access to weapons				
Yes	75.6 (64.9-83.9)	24.4 (16.1-35.1)	-	-
No	35.7 (28.2-44.0)	64.3 (56.0-71.8)	5.59 (3.00-10.4)	< 0.0001
Uncertain	44.9 (34.3-56.0)	55.1 (44.0-65.7)	3.82 (1.93-7.55)	< 0.0001
Patient afraid to go home				
Yes	74.1 (61.4-83.8)	25.9 (16.2-38.6)	-	-
No	39.6 (32.7-46.8)	60.4 (53.2-67.3)	0.228 (0.118-0.441)	< 0.0001
Uncertain	52.0 (38.3-65.4)	48.0 (34.6-61.7)	0.378 (0.168-0.848)	0.018
Patient or perp has contemplated suicide				
Yes	66.0 (51.5-78.0)	34.0 (22.0-48.6)	-	-
No	37.6 (30.7-45.2)	62.4 (54.8-69.3)	3.21 (1.63-6.32)	0.0008
Uncertain	61.6 (50.1-72.0)	38.4 (28.0-49.9)	1.21 (0.560-2.59)	0.63

* Note: The category with no Odds Ratio provided is the reference category to which other categories are compared.
'Perp' = perpetrator

Table 9: Safety Assessment Predictors of Sexual Abuse

Characteristic	Sexual Abuse % (95% CI)	No Sexual Abuse % (95% CI)	Odds Ratio (95% CI)*	*p*-value for OR statistical significance
Violence has increased				
Yes	13.6 (8.8-20.3)	86.4 (79.7-91.2)	-	-
No	0.9 (0.1-6.3)	99.1 (93.7-99.9)	0.060 (0.008-0.456)	0.0066
Uncertain	5.9 (1.9-16.7)	94.1 (83.3-98.1)	0.398 (0.113-1.41)	0.15
Perp uses alcohol and drugs				
Yes	11.1 (7.0-17.1)	88.9 (82.9-93.0)	-	-
No	2.2 (0.6-8.5)	97.8 (91.5-99.4)	5.44 (1.23-24.1)	0.026
Uncertain	7.4 (2.8-18.1)	92.6 (81.9-97.2)	1.56 (0.502-4.87)	0.44
Perp threatened to kill patient				
Yes	17.4 (10.8-26.9)	82.6 (73.1-89.2)	-	-
No	2.8 (1.1-7.2)	97.2 (92.8-98.9)	0.136 (0.044-0.426)	0.0006
Uncertain	6.3 (2.4-15.7)	93.7 (84.3-97.6)	0.321 (0.101-1.02)	0.054
Perp has access to weapons				
Yes	11.5 (6.1-20.7)	88.5 (79.3-93.9)	-	-
No	5.0 (2.4-10.1)	95.0 (89.9-97.6)	2.48 (0.885-6.94)	0.084
Uncertain	9.0 (4.3-17.6)	91.0 (82.4-95.7)	1.32 (0.467-3.75)	0.60
Patient afraid to go home				
Yes	13.8 (7.1-25.2)	86.2 (74.8-92.9)	-	-
No	4.4 (2.2-8.5)	95.6 (91.5-97.8)	0.287 (0.103-0.804)	0.018
Uncertain	12.0 (5.5-24.2)	88.0 (75.8-94.5)	0.852 (0.274-2.65)	0.78
Patient or perp has contemplated suicide				
Yes	21.3 (11.8-35.2)	78.7 (64.8-88.2)	-	-
No	4.1 (2.0-8.4)	95.9 (91.6-98.0)	6.29 (2.25-17.6)	0.0005
Uncertain	6.8 (2.9-15.4)	93.2 (84.6-97.1)	3.68 (1.17-11.6)	0.026

* Note: the category with no Odds Ratio provided is the reference category to which other categories are compared

Table 10: Safety Assessment Predictors of Psychological Abuse

Characteristic	Psychological Abuse % (95% CI)	No Psychological Abuse % (95% CI)	Odds Ratio (95% CI)*	*p*-value for OR statistical significance
Violence has increased				
Yes	19.3 (13.6-26.7)	80.7 (73.3-86.4)	-	-
No	8.4 (4.4-15.4)	91.6 (84.6-95.6)	2.60 (1.17-5.80)	0.019
Uncertain	21.6 (12.4-34.9)	78.4 (65.1-87.6)	0.869 (0.395-1.91)	0.73
Perp uses alcohol and drugs				
Yes	20.3 (14.6-27.4)	79.7 (72.6-85.4)	-	-
No	10.1 (5.3-18.3)	89.9 (81.7-94.7)	2.26 (1.02-5.00)	0.044

Uncertain	14.8 (7.6-26.9)	85.2 (73.1-92.4)	1.46 (0.626-3.41)	0.38
Perp threatened to kill patient				
Yes	27.9 (19.5-38.3)	72.1 (61.7-80.5)	-	-
No	9.1 (5.4-15.0)	90.9 (85.0-94.6)	0.258 (0.123-0.541)	0.0003
Uncertain	15.9 (8.8-27.1)	84.1 (72.9-91.2)	0.487 (0.214-1.11)	0.087
Perp has access to weapons				
Yes	21.8 (14.0-32.3)	78.2 (67.7-86.0)	-	-
No	12.9 (8.3-19.5)	87.1 (80.5-91.7)	1.89 (0.910-3.92)	0.088
Uncertain	15.4 (8.9-25.2)	84.6 (74.8-91.1)	1.53 (0.677-3.47)	0.31
Patient afraid to go home				
Yes	22.4 (13.5-34.9)	77.6 (65.1-86.5)	-	-
No	13.2 (9.0-18.9)	86.8 (81.1-91.0)	0.526 (0.248-1.12)	0.094
Uncertain	16.0 (8.2-28.9)	84.0 (71.1-91.8)	0.659 (0.248-1.75)	0.40
Patient or perp has contemplated suicide				
Yes	31.9 (20.2-46.4)	68.1 (53.6-80.0)	-	-
No	11.2 (7.2-16.9)	88.8 (83.1-92.8)	3.73 (1.71-8.10)	0.0009
Uncertain	16.4 (9.6-26.8)	83.6 (73.2-90.4)	2.38 (1.00-5.70)	0.051

* Note: The category with no Odds Ratio provided is the reference category to which other categories are compared.

Table 11: Safety Assessment Predictors of Verbal Abuse

Characteristic	Verbal Abuse % (95% CI)	No Verbal Abuse % (95% CI)	Odds Ratio (95% CI)*	*p*-value for OR statistical significance
Violence has increased				
Yes	37.9 (30.2-46.2)	62.1 (53.8-70.0)	-	-
No	21.5 (14.7-30.3)	78.5 (69.7-85.3)	0.449 (0.253-0.798)	0.0063
Uncertain	43.1 (30.4-56.9)	56.9 (43.1-69.6)	1.25 (0.649-2.39)	0.51
Perp uses alcohol and drugs				
Yes	46.4 (38.9-54.3)	53.6 (45.7-61.3)	-	-
No	19.1 (12.2-28.6)	80.9 (71.4-87.8)	3.67 (1.98-6.79)	< 0.0001
Uncertain	22.2 (13.1-35.2)	77.8 (64.8-86.9)	3.03 (1.48-6.20)	0.0024
Perp threatened to kill patient				
Yes	40.7 (30.9-51.3)	59.3 (48.7-69.1)	-	-
No	31.5 (24.4-39.5)	68.5 (60.5-75.6)	0.669 (0.384-1.17)	0.16
Uncertain	28.6 (18.8-40.9)	71.4 (59.1-81.2)	0.583 (0.291-1.17)	0.13
Perp has access to weapons				
Yes	39.7 (29.5-50.9)	60.3 (49.1-70.5)	-	-
No	32.1 (24.9-40.3)	67.9 (59.7-75.1)	1.39 (0.783-2.48)	0.26

Uncertain	29.5 (20.4-40.5)	70.5 (59.5-80.0)	1.58 (0.811-3.07)	0.18
Patient afraid to go home				
Yes	41.4 (29.5-54.3)	58.6 (45.7-70.5)	-	-
No	30.2 (24.0-37.3)	69.8 (62.7-76.0)	0.614 (0.333-1.13)	0.12
Uncertain	34.0 (22.3-48.0)	66.0 (52.0-77.7)	0.730 (0.333-1.60)	0.43
Patient or perp has contemplated suicide				
Yes	48.9 (35.1-62.9)	51.1 (37.1-64.9)	-	-
No	28.8 (22.5-36.1)	71.2 (63.9-77.5)	2.37 (1.22-4.58)	0.011
Uncertain	32.9 (23.1-44.4)	67.1 (55.6-76.9)	1.96 (0.922-4.15)	0.080

* Note: The category with no Odds Ratio provided is the reference category to which other categories are compared.

Table 12: Safety Assessment Predictors of Economic Abuse

Characteristic	Economic Abuse % (95% CI)	No Economic Abuse % (95% CI)	Odds Ratio (95% CI)*	*p*-value for OR statistical significance
Violence has increased				
Yes	10.7 (6.6-17.0)	89.3 (83.0-93.4)	-	-
No	4.7 (2.0-10.7)	95.3 (89.3-98.0)	0.408 (0.144-1.16)	0.093
Uncertain	3.9 (9.8-14.4)	96.1 (85.6-99.0)	0.340 (0.075-1.54)	0.16
Perp uses alcohol and drugs				
Yes	9.2 (5.5-14.9)	90.9 (85.1-94.5)	-	-
No	6.7 (3.1-14.2)	93.3 (85.8-96.9)	1.39 (0.516-3.77)	0.51
Uncertain	5.6 (1.8-15.9)	94.4 (84.1-98.2)	1.71 (0.472-6.21)	0.41
Perp threatened to kill patient				
Yes	15.1 (9.0-24.3)	84.9 (75.7-91.0)	-	-
No	5.6 (2.8-10.8)	94.4 (89.2-97.2)	0.333 (0.132-0.840)	0.020
Uncertain	1.6 (2.2-10.4)	98.4 (89.6-99.8)	0.091 (0.012-0.712)	0.022
Perp has access to weapons				
Yes	10.3 (5.2-19.2)	89.7 (80.8-94.8)	-	-
No	7.9 (4.4-13.6)	92.1 (86.4-95.6)	1.34 (0.515-3.49)	0.55
Uncertain	3.8 (1.2-11.3)	96.2 (88.7-98.8)	2.86 (0.729-11.2)	0.13
Patient afraid to go home				
Yes	15.5 (8.3-27.2)	84.5 (72.8-91.7)	-	-
No	4.9 (2.6-9.2)	95.1 (90.8-97.4)	0.283 (0.107-0.752)	0.011
Uncertain	6.0 (1.9-17.0)	94.0 (83.0-98.1)	0.348 (0.089-1.36)	0.13
Patient or perp has contemplated suicide				
Yes	21.3 (11.8-35.2)	78.7 (64.8-88.2)	-	-

No	4.1 (2.0-8.4)	95.9 (91.6-98.0)	6.29 (2.25-17.6)	0.0005
Uncertain	6.8 (2.9-15.4)	93.2 (84.6-97.1)	3.68 (1.17-11.6)	0.026

* Note: The category with no Odds Ratio provided is the reference category to which other categories are compared.

Table 13: Frequency of Abuse vs. Frequency of EMS use

	Frequency of Abuse						
Frequency of EMS use	Almost daily	At least once a week	At least once a month	Every 2-3 months	2-3 times a year	Once a year	First time
Almost daily	27	6	4	2	0	0	1
At least once a week	1	19	2	1	1	0	1
At least once a month	2	10	6	3	0	0	1
Every 2-3 months	4	4	3	6	2	1	2
2-3 times a year	1	4	4	3	5	1	2
Once a year	4	2	2	0	0	5	8
First time	8	6	0	2	0	1	30

Table 14: Safety Assessment Predictors of Referrals to Police

Characteristic	Referral to Police % (95% CI)	No Referral to Police % (95% CI)	Odds Ratio (95% CI)*	*p*-value for OR statistical significance
Violence has increased				
Yes	24.6 (18.2-32.5)	75.4 (67.5-81.8)	-	-
No	15.8 (8.4-27.6)	84.2 (72.4-91.6)	1.74 (0.775-3.92)	0.18
Uncertain	24.5 (14.5-38.3)	75.5 (61.7-85.5)	1.01 (0.473-2.15)	0.98
Perp uses alcohol and drugs				
Yes	28.3 (21.7-36.0)	71.7 (64.0-78.3)	-	-
No	9.8 (3.7-23.3)	90.2 (76.7-96.3)	0.274 (0.092-0.815)	0.020
Uncertain	16.0 (8.2-28.9)	84.0 (71.1-91.8)	0.483 (0.210-1.11)	0.087
Perp threatened to kill patient				
Yes	34.1 (24.9-44.8)	65.9 (55.2-75.1)	-	-
No	18.9 (12.3-28.1)	81.1 (71.9-87.7)	2.22 (1.12-4.38)	0.022
Uncertain	11.9 (5.8-22.9)	88.1 (77.1-94.2)	3.85 (1.55-9.53)	0.0036
Perp has access to weapons				
Yes	33.8 (24.1-45.0)	66.2 (55.0-75.9)	-	-
No	20.7 (13.6-30.1)	79.3 (69.9-86.4)	0.511 (0.256-1.02)	0.057
Uncertain	13.5 (7.4-23.3)	86.5 (76.7-92.6)	0.306 (0.135-0.694)	0.0045
Patient afraid to go home				
Yes	35.1 (23.9-48.2)	64.9 (51.8-76.1)	-	-
No	17.4 (11.9-24.9)	82.6 (75.1-88.1)	0.390 (0.193-0.791)	0.0090
Uncertain	18.8 (10.1-32.3)	81.3 (67.7-89.9)	0.427 (0.172-1.06)	0.066
Patient or perp has				

contemplated suicide				
Yes	19.6 (10.5-33.5)	80.4 (66.5-89.5)	-	-
No	24.8 (17.9-33.2)	75.2 (66.8-82.1)	0.738 (0.319-1.70)	0.48
Uncertain	18.6 (11.1-29.4)	81.4 (70.6-88.9)	1.07 (0.414-2.75)	0.89

* Note: The category with no Odds Ratio provided is the reference category to which other categories are compared.

Table 15: Safety Assessment Predictors of Any Referral

Characteristic	Any Referral % (95% CI)	No Referral % (95% CI)	Odds Ratio (95% CI)*	*p*-value for OR statistical significance
Violence has increased				
Yes	94.2 (88.8-97.1)	5.8 (2.9-11.2)	-	-
No	77.2 (64.6-86.3)	22.8 (13.7-35.4)	0.208 (0.081-0.536)	0.0011
Uncertain	93.9 (82.7-98.0)	6.1 (2.0-17.3)	0.944 (0.240-3.71)	0.93
Perp uses alcohol and drugs				
Yes	90.8 (85.0-94.5)	9.2 (5.5-15.0)	-	-
No	87.8 (73.9-94.8)	12.2 (5.2-26.1)	1.37 (0.463-4.05)	0.57
Uncertain	92.0 (80.5-97.0)	8.0 (3.0-19.5)	0.857 (0.269-2.74)	0.79
Perp threatened to kill patient				
Yes	96.5 (89.6-98.9)	3.5 (1.1-10.4)	-	-
No	84.2 (75.4-90.3)	15.8 (9.7-24.6)	5.13 (1.43-18.4)	0.012
Uncertain	91.5 (81.2-96.4)	8.5 (3.6-18.8)	2.53 (0.581-11.0)	0.22
Perp has access to weapons				
Yes	98.7 (91.4-99.8)	1.3 (0.2-8.6)	-	-
No	83.7 (74.7-89.9)	16.3 (10.1-25.3)	14.81 (1.91-115.0)	0.010
Uncertain	90.5 (81.5-95.4)	9.5 (4.6-18.5)	7.94 (0.952-66.2)	0.056
Patient afraid to go home				
Yes	93.0 (82.7-97.3)	7.0 (2.7-17.3)	-	-
No	88.6 (82.0-93.0)	11.4 (7.0-18.0)	0.589 (0.186-1.86)	0.37
Uncertain	93.8 (82.3-98.0)	6.3 (2.0-17.7)	1.13 (0.241-5.33)	0.88
Patient or perp has contemplated suicide				
Yes	91.3 (79.0-96.7)	8.7 (3.3-21.0)	-	-
No	87.6 (80.5-92.4)	12.4 (7.6-19.5)	0.673 (0.211-2.15)	0.50
Uncertain	95.7 (87.5-98.6)	4.3 (1.4-12.5)	2.13 (0.453-9.98)	0.34

* Note: The category with no Odds Ratio provided is the reference category to which other categories are compared.

Table 16: Safety Assessment Predictors of Any Referral besides Hospital ED

Characteristic	Any Referral besides Hospital ED % (95% CI)	No Referral besides Hospital ED % (95% CI)	Odds Ratio (95% CI)*	*p*-value for OR statistical significance
Violence has				

increased				
Yes	31.2 (24.0-39.4)	68.8 (60.6-76.0)	-	-
No	19.3 (11.0-31.6)	80.7 (68.4-89.0)	1.89 (0.89-4.01)	0.095
Uncertain	36.7 (24.5-50.9)	63.3 (49.1-75.5)	0.780 (0.394-1.54)	0.48
Perp uses alcohol and drugs				
Yes	36.2 (28.9-44.1)	63.8 (55.9-71.1)	-	-
No	14.6 (6.7-29.0)	85.4 (71.0-93.3)	0.302 (0.120-0.764)	0.011
Uncertain	22.0 (12.6-35.5)	78.0 (64.5-87.4)	0.497 (0.236-1.05)	0.067
Perp threatened to kill patient				
Yes	42.4 (32.3-53.0)	57.6 (47.0-67.7)	-	-
No	25.3 (17.5-34.9)	74.7 (65.1-82.5)	0.460 (0.245-0.866)	0.016
Uncertain	15.3 (8.1-26.8)	84.7 (73.2-91.9)	0.245 (0.107-0.562)	0.0009
Perp has access to weapons				
Yes	42.9 (32.3-54.1)	57.1 (45.9-67.7)	-	-
No	30.4 (21.9-40.6)	70.0 (59.5-78.1)	0.583 (0.310-1.10)	0.095
Uncertain	14.9 (8.4-24.9)	85.1 (75.1-91.6)	0.233 (0.106-0.510)	0.0003
Patient afraid to go home				
Yes	38.6 (26.9-51.7)	61.4 (48.3-73.1)	-	-
No	22.7 (16.4-30.6)	77.3 (69.4-83.6)	2.14 (1.09-4.18)	0.027
Uncertain	31.3 (19.8-45.6)	68.8 (54.4-80.2)	1.38 (0.615-3.11)	0.43
Patient or perp has contemplated suicide				
Yes	28.3 (17.2-42.8)	71.7 (57.2-82.8)	-	-
No	31.4 (23.8-40.2)	68.6 (59.8-76.2)	1.16 (0.550-2.46)	0.69
Uncertain	24.3 (15.7-35.6)	75.7 (64.4-84.3)	0.814 (0.351-1.89)	0.63

* Note: The category with no Odds Ratio provided is the reference category to which other categories are compared

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The Pearson chi-squared test for independence is used to investigate the relationship between two categorical variables. Typically the data is displayed in a contingency table (a.k.a. cross-tabulation table). The logic of the test rests on comparing the observed frequency (O_{ij}) in the ith row, jth column of the table to the frequency that would be expected in this cell (E_{ij}) if the two variables were independent. Under the null hypothesis, the test statistic $\sum_i \sum_j \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$ approximately follows a chi-squared distribution with (r-1)(c-1) degrees of freedom, where r is the number of rows in the contingency table and c is the number of columns. P-values thus obtained from this chi-squared distribution determines whether to reject the null hypothesis of independence. If it is a 2x2 contingency table, a continuity correction called the Yates correction is performed, which consists of subtracting 0,5 from each term in the numerator.

A key assumption of the Pearson chi-squared test for independence is that no cell in the contingency table should have an expected frequency less than 1, and not more than 20% of the cells should have an expected frequency less than 5. If this assumption is violated, the fit to the chi-squared distribution is poor. Hence, when dealing with a categorical variable in which the frequencies in one or more categories are low, a common approach is to eliminate these low-frequency categories from the analysis (especially in the case of a nominal variable) or to combine adjacent categories (especially in the case of an ordinal variable).

Rejecting the null hypothesis of independence allows for the conclusion that a relationship exists between the two categorical variables under investigation, but it does not describe the *nature* of this relationship. As long as the categorical variable deemed to be the "dependent variable" is binary (having only two possible values, usually labelled "success" and "failure"), binary logistic regression would be a good means of estimating the nature of the relationship more precisely. Logistic regression fits a linear predictor (a linear function of one or more independent variables) to a logit link function. The equation of the model takes the form:

$$\log\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \Lambda + \beta_k x_k$$

Here, x_1, x_2,… x_k are the independent variables and p is the probability of the dependent variable taking on the "success" value. The parameters are estimated using the Method of Maximum Likelihood. The parameter estimates (e.g., $\hat{\beta}_1$) may be interpreted as log-odds ratios, but it is more intuitive to work with $e^{\hat{\beta}_1}$, which can be interpreted as an odds ratio. The "odds" of an event refers to the ratio of the probability of an event occurring to the probability of the event not occurring. An "odds ratio" is thus a ratio of ratios: a ratio of the odds of an event under one condition to the odds of the same event under another condition. The event in question here is that of the dependent variable taking on the "success" value. For example, if the dependent variable is whether DV is detected, with detection representing "success" (used as a

statistical term and not a value judgment) and non-detection representing “failure,” and the independent variable is whether the patient is male (x_1=1) or female (x_1=0), then $e^{\hat{\beta}_1}$ can be interpreted as the estimated ratio of the odds of DV detection in male patients to the odds of DV detection in female patients. In other words, the odds of DV detection is $e^{\hat{\beta}_1}$ times as much in male patients as in female patients. Hence, if $e^{\hat{\beta}_1} > 1$ then DV detection is more likely in male patients than in female patients. If $e^{\hat{\beta}_1} < 1$ then DV detection is less likely in male patients than in female patients. Often $e^{\hat{\beta}_1}$ will be expressed as a percent rather than a decimal number. For instance, $e^{\hat{\beta}_1}$ = 1,25 would mean that the odds of DV detection is 1,25 times greater, or 25% greater, in male patients than in female patients.

A Wald chi-squared test tested the statistical significance of the individual parameter estimates in a logistic regression model. If there is just one categorical independent variable in the model then the result will usually agree with that from the Pearson chi-square test for independence. Hypothesis tests throughout this study are conducted at a 5% significance level ($p \leq 0.05$).

Version 3

Health Professions Council of South Africa

Professional Board: Emergency Care

Position Statement on Social Determinants on Health

INTRODUCTION

The need for timeous and appropriate access to emergency treatment and transportation is an important determinant of the health status of individuals. Emergency medical services (EMS) in South Africa focus on meeting this need through the provision of acute medical treatment in the pre-hospital setting and transportation of patients to, and between, health facilities.

It is acknowledged that only responding to adverse health events after they occur has limited impact on improvement of health of communities as a whole. It is also acknowledged that the overall health status of individuals and communities is largely determined by social determinants of health. In the context of social injustice and economic deprivation, the circumstances in which marginalized and vulnerable communities live and work are characterized by unhealthy conditions, such as (but not limited to):

a) unsafe housing, workplaces and transportation,
b) inter-personal and gender-based violence,
c) exposure to environmental hazards,
d) risk-taking behavior among young people,
e) drug and alcohol abuse,
f) poor nutrition,
g) declining physical or mental health activity,
h) impeded access to quality education,
i) unstimulating and unsafe child care,
j) unemployment and under-employment,
k) poor access to sanitation and other basic services, and
l) xenophobic violence.

By working within communities and gaining access to the homes, workplaces and other environments in which adverse health events occur, emergency care personnel are directly exposed to these social determinants of health and their health effects on a daily basis. Emergency care personnel are therefore uniquely positioned to play a key role in proactively identifying and responding to social determinants of health in communities – thereby contributing to health promotion and disease prevention.

RESOLUTION AND CALL FOR ACTION

The Professional Board Emergency Care (PBEC) endorses the findings of the World Health Organisation that "social injustice is killing people on a grand scale" and calling for action by relevant stakeholders to: improve daily living conditions; tackle the inequitable distribution of power, money and resources; and measure and understand the problem and assess the impact of action.[1]

The PBEC is committed to reviewing Emergency Care education and research, scope of practice, protocol and policies to be explicitly inclusive of health promotion and preventative care (upstream interventions) where appropriate.

The PBEC calls upon EMS organisations to –

1. recognize that they have an important role to play in responding to social determinants of health within the communities in which they work, and to educate their work force about this role;

2. encourage personnel to engage in health promotion activities, such as providing education in local schools and clinics on healthy lifestyles and injury prevention;

3. encourage personnel to identify and report health-related risks and threats to individuals and communities, and develop appropriate channels and protocols for such reporting and subsequent appropriate referral to take place; and

4. proactively develop, or utilise existing, intersectoral forums and referral networks with sectors such as local municipalities, social services, SAPS, education departments, water and sanitation departments, human settlements departments, traffic and road agencies, health departments and community-based organisations so that risks identified by EMS personnel can be rapidly and effectively addressed by the appropriate agencies and authorities;

5. develop appropriate, practical systems to monitor and evaluate the impact made by any interventions from various authorities;

6. recognize and advance the role of EMS organisations and personnel in advocacy to ensure that policies developed at all levels of government are responsive to social determinants of health.

The PBEC also calls upon all providers of EMS education to –

i. educate EMS students and practitioners on the importance of social determinants on health outcomes, and the role that they should be playing in identifying and responding to social determinants of health;

[1] Commission on Social Determinants of Health. *Closing the gap in a generation: health equity through action on the social determinants of health. Final report of the Commission on Social Determinants of Health.* Geneva, World Health Organization, 2008.

ii. regularly engage and review curricula to ensure its relevance to current social determinants of health of the time

iii. ensure that research agendas incorporate a focus on exploring opportunities for EMS to improve its impact on health outcomes through appropriately responding to social determinants of health.

CONCLUSION

In conclusion, a fundamental transformation is required in the conceptualization and implementation of the role of emergency care providers from only a narrow reactive response to emergencies to include a more meaningful and sustainable responsiveness to 'determinants' of emergencies and health. Emergency care providers must partner in a community of practice with all relevant stakeholders who contribute towards reducing burden of disease and improving quality of life. In so doing, the emergency care profession is responsive to World Health Assembly and World Health Organisation calls for reduction of health inequities through comprehensive intersectoral action on the social determinants of health.[2]

[2] World Health Assembly Resolution WHA62.14. *Reducing health inequities through action on the social determinants of health*. 22 May 2009. World Health Organisation *Rio Political Declaration on Social Determinants of Health* 21 October 2011.

Annexure 26: Co-author declarations for Publications

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3 September 2015

TO WHOM IT MAY CONCERN

This is to confirm that Mr. Navindhra Naidoo and I have co–authored and published an article titled "Risk Factor Management and perpetrator rehabilitation in cases of gender-based violence in South Africa: Implications of Salutogenesis" in the journal *Agenda*, May 2013.

I declare that this article was led by Mr. N. Naidoo in an attempt to understand the possibilities of salutogenesis as a theory relevant to the GBV discourse of his study. The article fulfils the requirements of submission for his PhD thesis to UCT as he conceptualized the paper, led the literature review and drafted the manuscript. The article has partly resulted from research conducted through a SANPAD funded project grant, *Managing and Responding to Gender Based Violence in South Africa Through Education, Training and Research: Synergies between Practitioners and Higher Education Institutions– A Case Study of The Advice Desk for the Abused*, for which I was project leader, hence the collaboration.

Mr. Naidoo's PhD research has also been in close alignment with the above mentioned research project and its goals and objectives, and he has been a member of this research team as a PhD scholar.

Please feel free to contact me should you require any further information.

Sincerely,

Dr. Lubna Nadvi

Political Science and International Relations Programme, UKZN
Board Member : Advice Desk for the Abused
Project Leader : *Managing and Responding to Gender Based Violence in South Africa Through Education, Training and Research : Synergies between Practitioners and Higher Education Institutions – A Case Study of The Advice Desk for the Abused*

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From: Mustafa [muszal01@hotmail.com]

Sent: Thursday, September 03, 2015 4:43 PM

To: Navindhra Naidoo

Subject: Declaration

I Mustafa Zalgaonker, co-authored the article " 'A stitch in time…may save nine': A systematic synthesis of the evidence for domestic violence management and prevention in Emergency Care" with Navindhra Naidoo published in the African Safety Journal Vol.12 No 2, 2014.

My involvement was to follow a protocol for EiDM and screen articles for relevance and to recommend to Mr Naidoo, with Mr Anthony Lawrence, its inclusion or not. I am aware that the article emanated from Mr Naidoo's PhD and whilst I met the requirements for collaborator and agreed to the final manuscript, the topic conceptualisation, EiDM methodology and analysis was the effort of Mr Naidoo.

Kind regards

M Zalgaonker

Annexure 27: Mandatory Child Abuse Reporting Guidelines by EC providers

Health Professions Council of South Africa (HPCSA)

Professional Board for Emergency Care (PBEC)

Draft Practice Guideline: Emergency Care provider's obligation to report abuse against children

Note: To be read in conjunction with other relevant HPCSA PBEC policy, specifically: The PBEC Position Statement on The Social Determinants of Health and the PBEC Domestic Violence Screening Protocol.

1. **Purpose:**

To make explicit:

1.1. That ALL emergency care professionals have an ethical and legal duty to protect children and

1.2. That they can be held accountable for non-reporting of cases of suspected abuses against children.

2. **Barriers to reporting of abuse:**

The South African Children's Act No. 38 of 2005 defines a child as a person under the age of 18 years. This means that almost 38% of the SA population (in 2013) are legally defined as children. Thirty per cent of the population is under 15 years of age, with a further 8% between the ages of 15 and 19. The official statistics for crimes perpetrated against this vulnerable population in SA remain alarmingly high. For the period 2012 - 2013, 495 540 cases of crimes against children were reported (that is estimated to be at least nine times lower than the actual number). Research into rape in SA revealed that in 84% of all sexual crimes committed against children, the perpetrator is known to the child. Children are subjected to a full spectrum of abuse, including verbal, physical, emotional and sexual abuse.
Emergency care workers cannot rely exclusively on social workers and police to detect abuse. Only 16 164 social workers were registered with the Council of Social Workers, giving a social worker/population ratio of 1:3 187. Additionally, police statistics indicate that there is one policeman serving every 336 citizens (police/population ratio 1:336).

3. **Legislative framework**

Convention on the Rights of the Child commits the UN and it's signatories to the vulnerability of children and opportunities for prevention. Article 19 of the Convention compels signatory states, of which SA is one, to 'take all appropriate social and educational measures to protect the child from all forms of physical or mental

violence, injury, neglect or negligent treatment, maltreatment or exploitation including sexual abuse'. Article 19(2) of the Convention makes it clear that measures used to protect children need to be protective and preventive and should encompass the identification, reporting, referral, investigation and treatment of child abuse**.** Article 16 of the **African Charter on the Rights and Welfare of the Child** echoes the obligations set out in the UN Convention. The Charter obligates the African Union (AU) and its signatories to establish special monitoring units and to provide the necessary support for the abused child and his/her caretakers.

The South African Constitution explicitly addresses the rights of children and affords them specific protection. Section 28(1)(d) holds that 'every child has the right to be protected from maltreatment, neglect, abuse and/or degradation'. **The Children's Act No. 35 of 2005** and its **amendment 41 of 2007** (promulgated in 2010) addresses children's rights in its entirety. Section 110 specifically deals with the protection of children and resonates with the UN Convention and the AU Charter on the protection of children's rights.

4. Mandatory reporting of child abuse in South Africa

Section 110 of the **Children's Amendment Act** provides details of the right to protection that children are afforded in terms of section 28 of the Constitution. This section compels certain professional sectors to report any child abuse, neglect or maltreatment that is suspected on reasonable grounds to a designated child protection organisation, the provincial department of social development or a police official. If the reporting is done in good faith and substantiated to the relevant authorities, the professionals responsible will not be held liable to civil claims as a result of their reporting. The Act further stipulates that the Department of Social Development must assess and further manage the situation in the best interests of the child.

In addition, section 54 of the **Sexual Offences and Related Matters Act** compels '[a] person' who knows or who has a 'reasonable belief or suspicion' of any form of sexual abuse against a child or mentally challenged individual to report it to a police official. If such reporting is done in good faith, in terms of section 54(2)(c), the person reporting cannot be held liable in criminal or civil proceedings.

Section 110 of the **Children's Amendment Act** does not specifically identify emergency care workers to identify abuse, but the spirit of the Act requires that where a child has been abused 'in a manner causing physical injury, sexually abused or deliberately neglected'. Ordinary citizens are given the discretion to report abuse but are not compelled to do so in terms of section 110.

The Sexual Offences Act, however, compels all citizens (i.e. all persons living in SA who are entitled to the rights promised by the **Constitution** in terms of section 3) who are aware of the sexual exploitation of children to report the offence to the police.

5. Who must they report to?

Section 110(1) of the **Children's Amendment Act** stipulates that suspected child abuse must be reported to child protection organisations, the provincial department of social development or the police.

6. When must the reporting be done?

Section 110 of the **Children's Amendment Act** implies that reporting of the suspicion of abuse must be done as soon as the suspicion is formed on reasonable grounds. The purpose of reporting is ultimately to ensure the safety and protection of the child in question. The reporting of a sexual offence must be done 'immediately' according to section 54(1)(a) of the **Sexual Offences Act**. 'Immediately' can be interpreted as on becoming aware of the sexual abuse or when there is a reasonable suspicion of abuse of a sexual nature.

The 'good faith' principle: Both acts state that the reporting has to be done in 'good faith'. The 'good faith' principle is an internationally recognised common-law duty to act honestly, openly and with conscientious impartiality. In the context of mandatory reporting legislation, the person reporting must report his/her belief of wrongdoing without any malicious/spiteful intent. The primary objective is the safety and protection of the child involved. The 'good faith' standard is measured objectively against standards of decency and fairness set by the community (in this instance represented by professionals and professional organisations) and not against the individual's subjective beliefs of impartiality.

'Grounds' must be based on the facts obtained from objectively exploring (with one's five senses) a particular situation or set of evidence. After considering or evaluating the facts from different objective points of view, a conclusion is drawn. If the conclusion remains the same, even when the facts are viewed from different perspectives, one is said to have grounds that a particular set of facts has merit. The courts, however, apply a measure of objectivity – that of the reasonable person – to ascertain whether the grounds for believing a set of facts are reasonable. The reasonable person refers to a fictional person who is deemed similarly situated to the one reporting, i.e., the reasonable emergency care provider. 'Reasonable grounds' are said to exist if this reasonable person would come to the same conclusion under these similar circumstances. In terms of the **Sexual Offences Act**, reporting can also be based on the 'disclosure' of the victim. The English courts have ruled that evidence obtained from a secondary source (eye witness) likewise gives rise to the legal obligation to report to the relevant authorities.

7. Liability

Reporting, when supported by a set of facts and done without any malicious intent, will not give rise to any claims of liability. The person reporting will not be held liable for damages under these conditions, even if it is ascertained that there is no abuse or neglect of any kind.

8. Accountability

Emergency care professionals can be held accountable for not reporting abuse of children under the conditions described above. HPCSA guidelines urge members to report any unethical or illegal conduct. According to the **Health Professions Act No. 56 of 1974**, the HPCSA can order a fine or a suspension for a period of time, or remove a member's name from the register, or impose a lesser penalty in the case of a guilty finding. Furthermore, in terms of section 54(b) of the **Sexual Offences and Related Matters Act**, failure to report sexual abuse or exploitation of children and mentally handicapped persons is deemed an offence and is punishable with a fine or imprisonment of up to 5 years, or both, if the person is found guilty.

9. Warning signs of child abuse

Emergency Care providers must look for parental risk factors, behavioural clues, symptom clues and physical clues (commonly manifesting on skin, bone and CNS). These must be a standard feature of any emergency care curriculum and be evidence-informed. Parents may seem evasive or inconsistent in their explanation of the injury/illness due to language or cultural differences, or to being embarrassed or afraid relating to some other issue. Cultural/language difficulties may also lead to delayed care.

Red flags (increased suspicion with injuries) include:

- explanation doesn't fit the injury as to pattern, timing, or developmental ability of child
- explanation keeps changing
- child is consistently blamed as cause of repeated injuries
- significant injuries attributed to a young sibling
- delay in seeking medical care
- history of multiple ED visits
- frequent change of primary care provider

Fractures are the second most common injury caused by child physical abuse whereas **bruises** are the most common injury. [1,2]

Failure to identify an injury caused by child abuse and to intervene appropriately may place a child at risk for further abuse, with potentially permanent consequences for the child. [1,3-5]

A fracture should be suspicious for child abuse in the following circumstances:

- There is no history of injury, or the history described is not consistent with the injury sustained.
- The caregiver provides inconsistent or changing histories.
- The fracture is in a non-ambulatory child.
    - "*Approximately 80% of all fractures caused by child abuse occur in children younger than 18 months"*[1].
- The fracture has a high specificity for child abuse; in infants and toddlers, these include classic metaphyseal lesions of long bones and rib, scapular, sternal, and spinous process fractures.

- *"Rib fractures are highly suggestive of child abuse. Most abusive rib fractures result from anterior-posterior compression of the chest. For this reason, rib fractures are frequently found in infants who are held around the chest, squeezed, and shaken. Rib fractures have high probability of being caused by abuse."*[1]

- There are multiple fractures or fractures of different ages.
- The child has other suspicious injuries.
- The caregiver delayed seeking medical treatment.

Recommendations

The main recommendations of a Child Maltreatment Prevention (CMP) evaluation report for South Africa (by WHO and HSRC) are to be heeded by health care providers [6]:

"(1) Place CMP as a distinct approach to promoting child wellbeing high on the political agenda; (2) recognize that prevention works best when integrated into broader programmes, such as maternal health, child immunization, and early childhood development; (3) improve the knowledge of key players about the immediate and long-term consequences of child maltreatment as a means of advocating for more attention to CMP in government departments; (4) increase funding for data collection to understand the magnitude of the problem, in particular for a national prevalence study; (5) advocate for increased political priority and more funds for CMP; and (6) integrate child maltreatment prevention programmes in health services already in place for families, e.g. family planning and reproductive health programmes."[6]

Increasing efforts to prevent child abuse and protect the children of SA may necessitate multiple and diverse interventions. Logically, however, a good starting point would be to enhance existing attempts to ensure the safety of children. To this end, it is recommended that routine/selective screening and mandatory reporting for child abuse is implemented by emergency care providers and that this is studied by emergency care researchers so that barriers to screening and reporting can be more specifically addressed. Paediatric fractures[1] serve as a cue to child abuse. Emergency Care relevance is to maintain a high index of suspicion for child abuse under the circumstances listed above and to document and report such observations. The EMS system must be strengthened so that every EMS provider becomes an advocate against child abuse and for child safety.

Acknowledgement:
This practice guideline emanates (with kind permission from the authors) from:

- Hendricks, ML. 2014. Mandatory reporting of child abuse in South Africa: Legislation explored. *S Afr Med J*; 104(8):550-552. DOI:10.7196/SAMJ.8110
- Naidoo, N. 2017. Gender-based Violence: Strengthening the role and scope of Prehospital Emergency Care by promoting theory, policy and clinical praxis. PhD Forensic Medicine Thesis: UCT, Cape Town

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End.